

*EDUCATION AND
PROFESSIONAL EMPLOYMENT
IN THE U.S.S.R.*

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Foreword

THE CONTINUING study and assessment of the capabilities of other nations in science and technology play an indispensable part in the formulation of our own national policies. The decisive role of education in the development of the professional manpower potential, particularly in science and engineering, and the responsibility of education for the recent large-scale Soviet technological advances are universally recognized.

Since publication by the National Science Foundation of *Soviet Professional Manpower* in 1955, the dynamic growth of Soviet scientific and engineering manpower has markedly accelerated, and there are currently indications that the Soviet Union intends to place even stronger emphasis upon engineering development and scientific research. These developments call for a continuing reappraisal of conditions in the Soviet Union and the provision of up-to-date information. It is hoped that the publication of the present volume will fill this need.

The present study was sponsored by the Foundation and prepared by the author under the auspices of the Office of Scientific Personnel, National Academy of Sciences—National Research Council, under the direction of Dr. M. H. Trytten. The research was conducted primarily at the Russian Research Center, Harvard University, drawing upon the rich resources of Soviet publications and other sources of information there as well as the helpful advice of staff.

Mr. Nicholas DeWitt, internationally recognized authority on Soviet education and professional manpower resources, has written widely on Soviet affairs. He was educated in Europe and Russia itself, later continuing his undergraduate and graduate studies at Harvard. He has been associated with the Russian Research Center for the last eleven years. Mr. DeWitt has lectured in a number of American universities and has also been engaged as a researcher and consultant for several institutions, including the Massachusetts Institute of Technology, the University of North Carolina, the National Bureau of Economic Research, the Battelle Memorial Institute, the Council for Economic and Industrial Research, and United States governmental agencies.

The new study is not merely a revision of *Soviet Professional Manpower* but constitutes an entirely new research effort, drawing upon the increased flow of Soviet official data as well as Western reports, accounts of visitors to the Soviet Union, and various other sources of information. As indicated in the author's preface, a preliminary draft of this report was circulated to a panel of Government and academic experts in the field of Soviet studies and education for review and comment. The present study has therefore had the benefit of available authoritative criticism.

In addition to a presentation of factual information this volume attempts a comprehensive and scholarly assessment of the Soviet educational system and professional manpower potential as it has developed in the past and as it is now emerging in the course of the current educational reforms in the U.S.S.R.

ALAN T. WATERMAN,

Director, National Science Foundation

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Contents

	<i>Page</i>
FOREWORD	v
PREFACE	vii
SOURCE ABBREVIATIONS USED IN THE TEXT	xxxv
INTRODUCTION	xxxvii
<i>Chapter I. THE SOVIET EDUCATIONAL SYSTEM</i>	3
The basic aims of Soviet educational policy	5
The debate on educational reform	9
1. Background of the 1958 debate	9
2. The key issue of the 1958 debate: Labor education in the secondary school	12
3. The 1958 debate: Secondary issues	17
The problem of gifted children	18
Language of instruction	19
Multi-track education and electives	19
School entrance age	20
Length of compulsory schooling	20
Methods of combining study and work training	20
4. The reform on other levels of education	21
The Soviet educational structure: Prereform and postreform	21
1. Preschool education	22
Prereform structure	22
Postreform structure	23
2. Elementary, incomplete secondary, and complete secondary education	23
A. General education schools	23
Prereform structure	23
Postreform structure	25
B. Vocational-technical schools	26
Prereform structure	26
Postreform structure	27
C. Secondary specialized schools—semiprofessional training establishments	28
Prereform structure	28
Postreform structure	28

D. Other forms of secondary education outside the regular school system	29
Secondary schools of the Soviet military and security establishment	29
Communist Party schools	30
Theological seminaries	30
3. Higher education	30
A. Regular institutions of higher education	30
B. Military and other types of higher education	32
4. Advanced training-research and degrees	33
5. Summary of changes in the school structure	35
6. Comparison of United States-U.S.S.R. educational effort	37
The Soviet system of educational administration and control	37
1. Preschool, primary and secondary school administration	37
2. Supervision of vocational and skilled labor training programs	39
3. Control over special-purpose schools	39
4. Administration of secondary semiprofessional and higher professional education	39
5. Control over advanced training and degree awards	41
6. Trade union of educational and research employees	42
The Communist Party and the educational system	42
The impact of labor problems on the educational reform	45
1. Quantitative trends in the supply of manpower	46
2. The school reform and labor productivity	49
3. The issue of juvenile labor	51
Military service and the Soviet educational system	52
1. The military draft	53
2. Coeducation and military training	57
Informal education for the masses: The People's Universities of Culture	59
Financing and monetary aids in Soviet education	60
1. The national budget and expenditures on education	61
2. Educational expenditures in relationship to gross national product	63
3. Disbursement of funds for education	63
4. Financial support of preschool education	64
5. Tuition fees	64
6. Stipends	66
7. Education costs	68
<i>Chapter II. SOVIET PRIMARY AND SECONDARY EDUCATION</i>	71
Literacy in the Soviet Union	71
Preschool education in the U.S.S.R.	73
1. Creches	73
2. Nursery schools	74
General aims of Soviet primary and secondary education	77
Polytechnical instruction in Soviet primary and secondary schools	78
1. The first phase: The roots of polytechnism	79

2. The second phase: The retreat from polytechnism toward traditional academic education	82
3. The third phase: The second intrusion of polytechnism—academic education with productive labor training	83
4. Present problems and prospects of polytechnical education ..	88
Adult education and alternative equivalents to secondary general education and their integration into the regular school structure ..	90
Boarding schools	97
1. Boarding school policy and sources of support	97
2. Conversion of orphanages into boarding schools	99
3. Boarding facilities and the inclusion of other schools in the boarding school concept	100
4. Type of instruction offered in boarding schools	102
Content of Soviet primary and secondary education: Curricula and programs of study	103
1. Stages in the development of Soviet school curriculum	104
The first phase: The experimental period	105
The second phase: The period of a standard academic school	107
The third phase: Current reforms	107
2. The structure of the Soviet primary and secondary school curriculum in the postwar period	108
3. Contents of subjects of instruction in Soviet primary and secondary schools	109
Elementary grades	109
Russian language and literature	109
Native language and literature	110
History	110
Foreign language	110
Geography	110
Mathematics	110
Biology	111
Physics	111
Chemistry	111
Activity subjects	111
Manual training	111
Polytechnical and specialized instruction	111
Summary	111
4. Native language schools	112
5. Foreign language instruction	114
6. The Soviet pupil in a squeeze	117
7. Textbooks	118
8. Some qualitative determinants of the educational process ..	118
Politics, atheism and moral education	119
Extracurricular activities and partisan youth organizations in Soviet schools	125
1. The Pioneer organization and its extracurricular activities ..	126
2. The Komsomol organization	129

Quantitative trends in Soviet primary and secondary schools	130
1. Aggregate enrollment on the primary and secondary level of education and its relationship to Soviet population	131
2. Enrollment in regular primary and secondary schools	133
Total enrollment (grades 1-10)	133
Elementary school enrollment (grades 1-4)	135
Junior secondary enrollment (grades 5-7)	135
Senior secondary school enrollment (grades 8-10)	135
3. Primary and secondary school enrollment by level of grades in relationship to school-age population	136
4. Summary of enrollment trends in the 1950's and prospects for 1965	139
5. Rural-urban differences in educational opportunities	142
6. Male-female differences in school enrollment	143
7. Implications of recent enrollment trends for "educational opportunity" in upper secondary schools	144
8. Enrollment in Soviet primary and secondary schools by type of school	145
9. Average size of school and related problems	146
10. The process of selection	147
The teaching staff in Soviet primary and secondary schools and student-teacher ratios	150
Disposition of secondary school graduates	152
<i>Chapter III. SECONDARY SPECIALIZED, VOCATIONAL AND SEMIPROFESSIONAL EDUCATION</i>	155
The Soviet system of vocational-technical education	156
1. The State Labor Reserve	157
2. Structure and types of vocational education	159
Trade schools	160
Railroad and transportation schools	160
Construction, mining and factory (FZO) schools	160
Vocational-technical schools	160
Trade schools for the mechanization of agriculture	160
Special mining schools	160
Special purpose vocational-technical schools	161
3. The educational reform and vocational education	161
Secondary semiprofessional education—general setting	162
1. Functions of the Soviet semiprofessional	163
2. Coordination of semiprofessional training	165
3. Specialties and specialization in Soviet semiprofessional schools	165
4. Types of instruction programs	166
5. Entrance requirements and the selection of students	168
6. Financial aid to semiprofessional students	169
Programs of instruction, curricula and syllabi in semiprofessional schools	169
1. General structure of the curriculum	171
A. General (academic) education subjects	172

CONTENTS

xv

B. General technical and specialized subjects	172
C. Applied instruction	172
2. Revised 1960 general curriculum for Soviet semiprofessional schools	175
3. Examples of technicum curricula in engineering-industrial fields	176
4. Instruction programs in agricultural technicums	179
5. Medical aides and health field semiprofessionals	180
6. Semiprofessional training for Soviet teachers	181
7. Qualitative factors affecting semiprofessional school instruction programs	182
Quantitative trends in Soviet semiprofessional education	185
1. Total enrollment in Soviet semiprofessional schools	187
2. Enrollment in semiprofessional schools by field	190
3. The growth of graduating classes from Soviet semiprofessional schools	190
4. Semiprofessional school acceptances and graduations by field	192
5. Composition of acceptances and graduations by field and type of program in semiprofessional schools in 1955	193
6. Composition of semiprofessional graduating classes in 1955 by specialty group and institutional grouping	194
7. Number and distribution of engineering-industrial technicum graduates by specialty field	194
8. Summary trend of semiprofessional graduations by field and period	197
9. Success rate of students in semiprofessional schools	199
10. Relation of semiprofessional training to higher education	200
11. Women among semiprofessional students	201
12. Geographic distribution and national composition of enrollment in Soviet semiprofessional schools	201
Semiprofessional school facilities and teaching staffs	203
The Soviet semiprofessional graduate	204
Semiprofessional education prospects	204
<i>Chapter IV. HIGHER PROFESSIONAL EDUCATION</i>	207
Types of Soviet higher educational establishments	208
1. Universities	210
2. Institutes	216
3. Other types of higher educational establishments	220
Administrative subordination of Soviet higher educational establishments	223
Felds of study, specialties and specialization in Soviet higher education	225
Types of instruction programs, enrollments and part-time education	229
1. Types of instruction programs	229
2. Distribution of enrollment by type of program	231
3. Extension-correspondence programs	234
4. The educational reform and new programs of instruction in Soviet higher education	237

Entrance requirements, supply and selection of applicants in Soviet higher education	242
1. Current admission procedures	243
2. The qualitative issue: The selection of higher education students in historical perspective	246
3. The qualitative issue: Recent changes and debate on the selection of higher education students	248
4. The qualitative issue: Entrance examinations	256
5. The quantitative issue: Supply of applicants and first-year admissions	258
6. The quantitative issue: First-year admissions by type of program and field of study	265
Instruction programs in Soviet higher educational establishments	274
1. Structural components of higher education programs	274
2. Instruction programs in Soviet universities	276
3. University programs in physics	277
4. University program in chemistry	280
5. University program in mechanics	280
6. University program in the humanities—Russian language and literature	281
7. University program in a social science—political economy	282
8. Other university programs	282
9. Engineering education—general aspects	283
10. Electrical engineering	285
11. Mechanical engineering	285
12. Chemical engineering	287
13. Civil engineering	288
14. Technology and development profiles in engineering programs	288
15. Operations and maintenance engineering and other programs	290
16. Engineering economics and management	291
17. Industrial practice in Soviet engineering programs	292
18. Engineering thesis—the diploma project	293
19. Medicine	294
20. Veterinary medicine	295
21. Agronomy	296
22. Teacher education	297
23. Fine arts	299
24. Higher Communist Party schools	300
25. Summary appraisal of Soviet higher education programs	301
The instruction process: Qualitative factors	302
1. Instruction methods	303
2. The instruction load	304
3. Examinations and grading	305
4. Textbooks	308
5. The use of movies as a new instructional device	309
6. Laboratory equipment and research facilities	310
7. Choice of field as a qualitative factor	310
8. Student accommodations	311

9. Military training and physical education	312
10. Political indoctrination	312
Quantitative trends in Soviet higher education	313
1. Total enrollment	314
2. Enrollment by branch	317
3. Total graduations and distribution by type of program	322
4. Graduation trends by branch	326
5. Comparison of Soviet and American graduating classes	339
6. "Success" rates of students in Soviet higher education	342
7. The role of women in Soviet higher education	344
8. Composition of students by social origin: Access to higher education by social class	350
9. Regional differences in the availability of higher education	352
10. Soviet higher education and the nationalities policy	354
The placement of Soviet professional graduates	360
Physical plant and other facilities in Soviet higher education	363
Teaching personnel in Soviet higher education	365
1. Procedures for making academic appointments	365
2. Definition of teaching staff and multiple-job holders	367
3. Teaching load	368
4. The growth of teaching staffs by branch and in relation to enrollment	369
5. Size of total teaching staffs and student-teacher ratios	370
 <i>Chapter V. ADVANCED DEGREES AND SOVIET RESEARCH AND ACADEMIC PERSONNEL</i>	373
Advanced research training and degrees	373
Soviet academic and research personnel— <i>RAP</i>	375
Historical development of procedures for advanced training, academic degree awards, and advanced appointments	377
Aspirantura training and candidate degree award procedures	378
Award procedures for the doctor degree	383
The 1960 revision of advanced degree award procedures	385
Qualitative problems of advanced degree training	387
Quantitative aspects of advanced training and the award of advanced degrees	392
1. Aspirantura training	392
2. Completion of aspirantura training and its relationship to the award of candidate degrees	395
3. Candidate degrees	400
4. Doctor degrees	403
5. Social profile of advanced degree recipients	406
Composition of research and academic personnel (<i>RAP</i>)	409
Historical trend in number and composition of <i>RAP</i>	414
1. Growth of total number of <i>RAP</i> in higher educational and research establishments	414
2. Number of advanced degree holders among <i>RAP</i>	416
3. Advanced academic rank and <i>RAP</i>	416
4. The growth of <i>RAP</i> by field	417

5. Geographic distribution of <i>RAP</i>	418
6. Social profiles of <i>RAP</i>	419
Soviet research establishments and the employment of <i>RAP</i>	422
Reorganization of the Soviet research and development establishment	428
 <i>Chapter VI. EMPLOYMENT OF PROFESSIONAL AND SPECIALIZED MANPOWER IN THE U.S.S.R.</i>	437
Soviet population and levels of educational attainment in the U.S.S.R. and the United States	438
Trend in the level of educational attainment of the Soviet population, 1939 and 1959	441
Total number of graduates and the employment of Soviet higher education graduates in the national economy of the U.S.S.R.	443
Stock, flow and attrition rates of Soviet professional and semiprofessional graduates, total and by specialty branch	448
1. Total number of Soviet professional and semiprofessional graduates and attrition rates	448
2. Retention rates of professionals and semiprofessionals in employment by period of graduation	450
3. Soviet professional graduates by specialty field	452
4. Soviet semiprofessional graduates by specialty field	452
5. Historical trends in United States-U.S.S.R. professional manpower flow	452
6. Long-run trends in the stock, flow and losses among Soviet professionals and semiprofessionals by field	456
7. Long-run trend in growth and distribution of Soviet specialized manpower by field	460
8. Stock of Soviet specialized manpower in 1960 and 1965 projection	461
Growth of the Soviet work force of workers and employees and employment of specialized personnel	462
Soviet placement policies and the role of the Communist Party in the selection of executive personnel	463
The employment of Soviet professional manpower by branch and industry sector	466
1. Employment of Soviet professional and semiprofessional specialists by industry sector and branch of the national economy	468
2. Relationship of fields of training to employment by industry branch	468
3. Comparison of the employment of Soviet professionals by branch and sector of industry with the pattern of employment of U.S. college graduates	472
4. Soviet professionals and semiprofessionals by level of administrative subordination of employing unit	478
5. Regional pattern of employment of Soviet specialists	480
The Soviet intelligentsia and professional and semiprofessional personnel	481

Leading administrative, managerial and specialized personnel in the Soviet labor force of workers and salaried employees	485
1. Composition of Soviet leading personnel and specialists	486
2. Leading personnel and the employment of specialists by industry sector	487
The employment of women in the U.S.S.R. and the role of women among Soviet professionals and semiprofessionals	490
1. The Soviet population and the participation of women in the Soviet labor force	490
2. Women among workers and salaried employees by branch and sector of the Soviet economy, 1928, 1958	491
3. Women among Soviet professionals employed in the national economy, by specialty field	492
4. Women and semiprofessional employment	493
5. Women among leading administrative, managerial and specialized personnel	494
Soviet industrial employment and managerial, administrative and specialized personnel: Definition of categories	496
Leading personnel in Soviet industry, 1957	498
Historical trend in the employment of <i>ETMP</i> in relation to total employment in Soviet industrial enterprises	499
Historical trend in the proportion of specialists with formal training among Soviet <i>ETMP</i> in industrial enterprises	502
Historical trend in the ratios of <i>ETMP</i> to production workers in various sectors of Soviet industry	502
Total employment of professionals, and employment of professional engineers by sector of industry in 1959	504
Total employment of semiprofessionals and employment of engineering and industrial technicians by sector of industry in 1959	506
Rates of employment of professionals and semiprofessionals in relation to number of production workers in Soviet industry	507
Problem of utilization: The total number of Soviet graduates in engineering-industrial fields by specialty group and their employment by industry sector	508
Planning problem: Determination of demand for <i>ETMP</i> and professional engineers in Soviet industry	511
Leading personnel, <i>ETMP</i> and specialists in construction enterprises	517
Leading administrative personnel and the employment of specialists in transportation and communication	518
Leading managerial and specialized personnel employed in Soviet agriculture	519
The stock and employment of professionals in the medical and health fields	521
Employment, leading personnel and higher education graduates employed in Soviet educational-cultural services	523
Employment, leading personnel and professional graduates in Soviet research and development, project design and research (science service) establishments	525

Social aspects of Soviet professional manpower	529
1. Role of women: Summary of trends	529
2. Social origin of Soviet professional personnel	529
3. National composition of Soviet professional and semiprofessional manpower	530
4. Soviet professionals and Communist Party membership	533
Professional wages and incentives	537
POSTSCRIPT	547
APPENDICES	549
BIBLIOGRAPHY	815
INDEX	837

Appendices

Appendix to Introduction

A note on the difficulties encountered in working with Soviet educational and manpower statistics

Appendix to Chapter I

Appendix I—ERL. Soviet laws on the school reform: Comparative review of legislative decrees on educational reform for the U.S.S.R., the Russian SFSR and the 14 other union republics

Appendix to Chapter II

Table II—A—0. Total, urban and rural preschool educational facilities, enrollment and teachers in the U.S.S.R., 1914—59

Table II—A—1. Aggregate enrollment (full- and part-time) of all types in Soviet primary and secondary schools, 1914, 1922—59 and 1965 projection

Table II—A—2. Total, urban and rural enrollment in primary and secondary schools of general education by type of school in the U.S.S.R., 1914, 1922—40, 1945—59

Supplement to table II—A—2

Table II—A—3. Total, urban and rural enrollment in primary and secondary schools of general education in the U.S.S.R., by level of grades, 1914, 1922—40, 1945—59

Table II—A—4. Estimates of hypothetical population age cohort of 18-year-olds in the Soviet Union for 1955—67

Table II—A—5. Population of the U.S.S.R. by age groups and sex in accordance with the Soviet population censuses of 1926, 1939, and 1959

Table II—B—1. General curriculum of Soviet primary and secondary school as of 1947

Table II—B—2. General curriculum of Soviet primary and secondary school as of 1952

Table II—B—3. General curriculum of Soviet primary and secondary school as of 1955

Supplement to table II—B—3

Table II—B—4. General curriculum of Soviet primary and secondary school as of 1957

Page

	Page
Table II—B—5. General curriculum of Soviet primary and secondary school introduced in 1959	591
549 Table II—C—1. Graduations in the U.S.S.R. from the 10th grade of the complete secondary school or its equivalent, 1927—60, and 1965 projection	592
556 Table II—D—1. Total number of teachers in Soviet primary and secondary schools, 1914, 1922—59	593
556 Table II—D—2. Distribution of Soviet primary and secondary school teachers by grade level, urban-rural employment, sex, education and experience in 1955—56	594
576 Table II—D—3. Distribution of Soviet primary and secondary school teachers by grade level, sex, education and experience in 1958—59	595
577 Table II—D—4. Distribution of intermediate (5—7) and upper (8—10) grade teachers by subject matter and education in 1955—56	595
579 Table II—D—5. Distribution of intermediate (5—7) and upper (8—10) grade teachers by subject matter and education in 1958—59	596
579 Table II—F—1. Number of Soviet primary and secondary schools, by type of school, 1914, 1922—59	597
 <i>Appendix to Chapter III</i>	
580 Appendix III—AR. Rules for admission to regular secondary specialized educational establishments of the U.S.S.R. for the academic year 1959—60	600
581 Table III—A—1—S. Aggregate acceptances, enrollment in, and graduations from Soviet secondary specialized educational establishments by type of program of study in selected years, 1914—59	602
582 Table III—A—1—A. Acceptances in Soviet secondary semiprofessional schools, 1928—60	604—605
583 Table III—A—1—E. Enrollment in Soviet secondary semiprofessional schools, 1928—59	606—607
584 Table III—A—1—G. Graduations from Soviet secondary semiprofessional schools, 1928—60	608—609
585 586 General note to tables III—A—1—A, III—A—1—E, and III—A—1—G	610
589 Sources and notes to table III—A—1—A	610

	Page
Supplement to table III-A-1-A	610
Sources and notes to table III-A-1-E	610
Supplement 1 to table III-A-1-E	611
Supplement 2 to table III-A-1-E	612
Sources and notes to table III-A-1-G	612
Supplement to table III-A-1-G	613
Table III-A-2. Relative proportion of women among regular full-time students in Soviet secondary semiprofessional establishments, 1927-59	614
Table III-A-3. National composition of students enrolled in Soviet secondary specialized educational establishments, selected years	614
Appendix III-B-1. Specialties offered in Soviet semiprofessional schools as of 1959	614
Table III-B-2. Reconstructed program of instruction from individual course syllabi of Soviet technicum for radio engineering (specialty 0704), 1958	620
Table III-B-3A. General technicum curriculum in mining engineering	621
Table III-B-3B. Reconstructed technicum curriculum for mining engineering with specialization in exploitation of mineral deposits	622
Table III-B-4. Curriculum in 4-year technicum for agricultural technicians in agronomy (specialty 0501) as of 1956	622
Table III-B-5. Secondary semiprofessional school curriculum in 3-year (<i>fel'dsher</i>) medical school	623
Table III-B-6. Secondary semiprofessional school curriculum in 4-year pedagogical school for elementary teachers as of 1952	623
Table III-B-7. Secondary semiprofessional school curriculum in 2-year pedagogical school for preschool teachers as of 1954	623
Table III-C-1. Number of Soviet secondary semiprofessional schools, 1914-59	624
Table III-C-2. Number of Soviet secondary semiprofessional schools by administrative jurisdiction and republic as of January 1959	625
<i>Appendix to Chapter IV</i>	
Appendix IV-AR. Rules for admission to regular higher educational establishments in the U.S.S.R. for the academic year 1959-1960	629
Table IV-A-O. Distribution by previous preparation of entrants into Soviet higher educational establishments in the fall of a given year	634
Table IV-A-1-S. Aggregate acceptances, enrollment in, and graduations from Soviet higher educational establishments by type of program of study in selected years, 1914-59	634
Table IV-A-1-A. Acceptances in Soviet higher educational establishments, 1928-60	636-637
Table IV-A-1-E. Enrollment in Soviet higher educational establishments, 1928-59	638-639
Table IV-A-1-G. Graduations from Soviet higher educational establishments, 1928-60	640-641
General notes to tables IV-A-1-A, IV-A-1-E, and IV-A-1-G	642
Sources and notes to table IV-A-1-A	642
Supplement to table IV-A-1-A	643
Sources and notes to table IV-A-1-E	644
Supplement to table IV-A-1-E (total enrollment in Soviet higher educational establishments, 1914-28)	649
Sources and notes to table IV-A-1-G	649
Supplement to table IV-A-1-G	649
Table IV-A-2. Graduation rates in Soviet higher educational establishments, 1946-59	651
Table IV-A-3. Projection estimate of graduating classes in all fields from Soviet higher educational establishments, 1956-65, and actual graduations, 1956-59	652
Table IV-A-4. Projection of 1959-65 graduates from Soviet higher educational establishments by branch	652
Table IV-A-5. Relative proportion of women among regular full-time students in Soviet higher educational establishments, 1926-37, 1940, 1950, 1955-59	654
Table IV-A-6. Composition by social origin of students in Soviet higher educational establishments, 1927-38	655
Table IV-A-7. Composition of regular students by nationality in Soviet higher educational establishments, 1927, 1929-35, 1950, 1956-59	656
Supplement to table IV-A-7 (national composition of students enrolled in Soviet higher educational establishments, selected years, 1927-59)	657
Appendix IV-B-1. Specialties (<i>spetsialnosti</i>) offered in Soviet higher educational establishments as of 1959	657
Appendix IV-B-2. Divisions of instruction (<i>fakul'tety</i>) of Soviet higher educational establishments	677
Appendix IV-B-3. Directory of institutes, universities, divisions and specialties in Soviet higher educational estab-	

<i>Page</i>		<i>Page</i>
681	lishments as of 1959	729
711	Supplement to appendix IV-B-3 (list of Soviet military higher educational establishments of the academy type)	729
712	General note to tables IV-B-4 through IV-B-21	730
713	Table IV-B-4. Physics—University program: Comparison of 1955 and 1959 curricula (specialty 2016)	730
714	Supplement to table IV-B-4	730
716	Table IV-B-5. Chemistry—University program: Comparison of 1955 and 1959 curricula (specialty 2018)	731
716	Supplement 1 to table IV-B-5	732
717	Supplement 2 to table IV-B-5	732
718	Table IV-B-6. Mechanics—University program: Comparison of 1955 and 1959 curricula (specialty 2014)	732
718	Supplement to table IV-B-6	732
720	Table IV-B-7. Humanities—Russian language and literature, university program: Comparison of 1955 and 1959 curricula (specialty 2001)	733
720	Supplement to table IV-B-7	733
721	Table IV-B-8. Economics — Political economy in universities: Comparison of 1955 and 1959 curricula (specialty 2010)	734
721	Supplement to table IV-B-8	734
722	Table IV-B-9. Electrical engineering—Electronic equipment, institute program: Comparison of 1955 curricula—5-year general and 5½-year individual (specialty 0611)	735
723	Supplement to table IV-B-9	735
724	Table IV-B-10. Mechanical engineering—Machine building (turbines)—Institute curriculum: Comparison of 1955 general 5-year and individual 5½-year curriculum (specialty 0521)	735
725	Supplement to table IV-B-10	735
726	Table IV-B-11. Mechanical engineering—Design and technology of machine tools: Institute curriculum, 1946	738
726	Supplement to table IV-B-11 (reconstruction of M.I.T. curriculum in mechanical engineering, with specialty in materials technology and metals processing, 1952)	738
727	Table IV-B-11A. Mechanical engineering—Design and technology of machine tools: Institute curriculum, 1955 (specialty 0501)	740
727	Supplement to table IV-B-11A	740
728	Table IV-B-12. Chemical engineering—Technology of silicates: Institute curriculum, 1938	741
	Supplement to table IV-B-12 (reconstruction of M.I.T. curriculum in	742
	chemical engineering, with specialty in industrial chemistry)	743
	Table IV-B-12A. Chemical engineering—Technology of silicates: 5-year institute curriculum, 1955 (specialty 0806)	743
	Supplement to table IV-B-12A	743
	Table IV-B-13. Civil engineering—Hydrotechnical structures and power stations: Comparison of 1955 general and individual 5-year curricula (specialty 1203)	743
	Supplement 1 to table IV-B-13	743
	Supplement 2 to table IV-B-13 (courses in the Soviet programs of training in civil engineering, with specialization in hydrotechnical structures, late 1930's)	743
	Table IV-B-14. Operations and maintenance engineering—Automotive transport: 5-year institute program, 1955 (specialty 1609)	743
	Supplement to table IV-B-14	743
	Table IV-B-15. Engineering economics—Economics and organization of machine building industry: Comparison of 1955 and 1959 curricula (specialty 1709)	743
	Supplement to table IV-B-15	743
	Appendix IV-B-16. Diploma project requirements in a Soviet engineering institute	745
	Table IV-B-17. Agronomy: 5-year program in agricultural institutes, 1955 curriculum (specialty 1502)	745
	Supplement 1 to table IV-B-17	745
	Supplement 2 to table IV-B-17 (4-year program of instruction in agronomy offered at Timiriazev Agricultural Academy in Moscow, 1945)	745
	Table IV-B-18. Veterinary medicine: 5-year program in veterinary institutes and departments, 1955 curriculum (specialty 1507)	746
	Supplement 1 to table IV-B-18	746
	Supplement 2 to table IV-B-18 (4-year veterinary medicine program as of 1947)	746
	Table IV-B-19. Medicine: Comparison of Soviet 6-year medical curricula, 1945 and 1955	747
	Supplement 1 to table IV-B-19 (a comparison of medical curricula in the Soviet Union and in three American medical schools as of the mid-1950's)	747
	Supplement 2 to table IV-B-19 (a historical comparison of medical	747

<i>Page</i>	<i>Page</i>		
curricula in Soviet and American medical schools)	743	of doctor degree holders as of Oct. 1, 1955, and estimated losses	761
Table IV-B-20. Pedagogy, teacher of physics and fundamentals of production: 5-year program in pedagogical institutes as of 1957 (specialty 21YZ)	744	Table V-B-1. Number of research, academic and advanced degree personnel in Soviet higher educational and research establishments, 1914-60	763
Supplement to table IV-B-20	744	Table V-B-2. Summary data on the composition of Soviet research and academic personnel (RAP) for selected postwar years	765
Table IV-B-21A. Curriculum of inter-regional Communist Party schools (MPSh) for party functionaries	745	Table V-B-3. Distribution of RAP total, with doctor's degrees and with candidate's degrees by field of knowledge as of Oct. 1, 1955	766
Table IV-B-21B. Curriculum of inter-regional Communist Party schools (MPSh) for newspaper workers	745	Table V-B-4. Distribution of RAP total, with doctor's degrees and with candidate's degrees by field of knowledge as of Oct. 1, 1958	767
General note to appendix tables IV-C-1, IV-C-2, and IV-C-3	746	Table V-B-5. Distribution of RAP total, with doctor's degrees and with candidate's degrees by field of knowledge as of Oct. 1, 1959	768
Table IV-C-1. Official reporting of the total number of Soviet higher educational establishments, 1914, 1920-59	746-749	Table V-B-6. National composition of research and academic personnel (RAP) in the U.S.S.R. for selected years, 1939-59	769
Table IV-C-2. Number of Soviet higher educational establishments, by field, for selected years, 1913-49	747	Appendix V-C-1. Soviet higher educational and research establishments which offer advanced degree training	769
Table IV-C-3. Soviet higher educational establishments, by type, branch and specialty group as of 1947, 1954, 1955, 1958, and 1959	748-749	Part I. List of Soviet higher educational establishments and scientific research institutes accepting candidate degree dissertations only as of August 1956	770
Table IV-D-1. Teaching staffs in Soviet higher education, 1927-59	749	Part II. List of Soviet higher educational establishments and scientific research institutes accepting both candidate and doctor degree dissertations as of August 1956	772
<i>Appendix to Chapter V</i>			
Table V-A-1. Enrollment, acceptances and completion of aspirantura (advanced degree) training 1929-59	752-753	Table V-D-1. Number of research establishments in the U.S.S.R. in selected years, 1914-60	775
Table V-A-2. Distribution of aspirantura enrollment by field of study in the fall of selected years, 1951-59	754	<i>Appendix to Chapter VI</i>	
Supplement to table V-A-2 (distribution by branch of institution of aspirantura students enrolled in higher educational establishments of the U.S.S.R. for selected years, 1934-46)	755	Table VI-A-1. Aggregate number of professionals and semiprofessionals employed in the civilian economy of the U.S.S.R., selected years, 1913-59	779
Table V-A-3. Number of advanced degrees of candidate and doctor awarded in all fields in the U.S.S.R., 1934-59	756	Table VI-A-2-P. Soviet professional labor force: Actual number of graduate specialists employed in the civilian economy of the U.S.S.R. by branch specialty in which they were trained, 1928-59	781
Supplement 1 to table V-A-3 (award of candidate degrees, total and by sex, 1946-53)	757	Table VI-A-2-SP. Soviet semiprofessional labor force: Actual number of technical specialists employed in the civilian economy of the U.S.S.R. by branch specialty in which they were trained, 1928-59	781
Supplement 2 to table V-A-3 (estimated attrition rates among advanced degree holders of candidate and doctor, 1954-57)	758		
Table V-A-4. Number and distribution by field of candidate degrees awarded in the U.S.S.R., 1937-55; employment of candidate degree holders as of Oct. 1, 1955, and estimated losses	759		
Table V-A-5. Number and distribution by field of doctor degrees awarded in the U.S.S.R., 1937-55; and employment			

Page	Page
Supplement to tables VI-A-2-P and VI-A-2-SP (composition of Soviet trained manpower, by employment, year end 1928 and 1932)	796
Appendix VI-A-3. Soviet professional and semiprofessional labor force: A comparison of estimates and official reporting of the absolute number of specialists employed in the civilian economy	797
General note to appendix tables, series VI-B (estimating techniques: attrition rates and projections of the number of specialists employed in the national economy) ..	798
Table VI-B-1. Number, graduates and estimated annual attrition rates for Soviet professionals and semiprofessionals in all fields employed in the national economy of the U.S.S.R., 1954-59	799
Table VI-B-2-P. Soviet professional labor force: Supply, graduates and attrition rates, 1955-56	800
Table VI-B-2-SP. Soviet semiprofessional labor force: Supply, graduates and attrition rates, 1955-56	801
Table VI-B-3-P. Soviet professional labor force; Supply, graduates and attrition rates, 1956-57	802
Table VI-B-3-SP. Soviet semiprofessional labor force: Supply, graduates and attrition rates, 1956-57	803
Table VI-B-4-P. Soviet professional labor force: Supply, graduates, and projection of the number employed, 1957-60, 1965	804
Table VI-B-4-SP. Soviet semiprofessional labor force: Supply, graduates, and projection of the number employed, 1957-60, 1965	805
Table VI-B-5-P. Soviet professional labor force: Supply, graduates, and attrition rates, 1957-59	806
Table VI-B-5-SP. Soviet semiprofessional labor force: Supply, graduates, and attrition rates, 1957-59	807
General note to appendix tables, series VI-C	807
Table VI-C-1-P. Supply and employment of higher education graduates in the U.S.S.R. as of Jan. 1, 1941	808
Table VI-C-2-P. Supply and employment of higher education graduates in the U.S.S.R. as of Dec. 1, 1956	809
Table VI-C-3-P. Supply and employment of higher education graduates in the U.S.S.R. as of Dec. 1, 1957	810
Table VI-C-4-P. Supply and employment of higher education graduates in the Ukrainian SSR as of Dec. 1, 1956 ..	811
Table VI-C-5-P. Supply and employment of higher education graduates in the U.S.S.R. as of Dec. 1, 1959	812
Table VI-C-1-SP. Supply and employment of semiprofessional graduates in the U.S.S.R. as of Jan. 1, 1941	813
Table VI-C-2-SP. Supply and employment of semiprofessional graduates in the U.S.S.R. as of Dec. 1, 1956	814
Table VI-C-3-SP. Supply and employment of semiprofessional graduates in the U.S.S.R. as of Dec. 1, 1957	815
Table VI-C-4-SP. Supply and employment of semiprofessional graduates in the Ukrainian SSR as of Dec. 1, 1956 ..	816
Table VI-C-5-SP. Supply and employment of semiprofessional graduates in the U.S.S.R. as of Dec. 1, 1959	817
Table VI-US-1. Total number of employed persons in the United States by major industry group, occupation group and sex, as of April 1950	818
Table VI-US-2. Experienced U.S. civilian labor force of employed persons 14 years of age and over and persons with four or more years of college education, by major occupation group, as of April 1950	819
Table VI-US-3. Estimated number of persons employed in the United States with four or more years of college education, by major industry group, occupation group and sex, as of April 1950	820
Table VI-US-4. Number and ratio of persons with four or more years of college education among selected engineering and scientific occupations in the United States, by sex, as of April 1950	821
Appendix VI-Q. Comparison of Soviet and United States reporting of industry sectors	822
Appendix VI-W. Quotations of monthly wage scales and index of wages for various occupations of Soviet workers and salaried employees	823

Tables

Chapter I

I-1. Quantitative index of performance of educational systems in the United States and the U.S.S.R. in the 1950's
 I-2. Expenditures on educational-cultural services in the U.S.S.R.'s national budget for selected years
 I-3. Stipend funds allocated in the national budget of the U.S.S.R., estimated number of recipients and average annual and monthly stipend, 1957
 I-4. Educational expenditures by item in Soviet educational institutions, 1957 ..
 I-5. Annual cost of education per student in Soviet educational institutions, selected years 1933-59

Chapter II

II-1. Literacy rates in the Russian empire and the U.S.S.R.
 II-2. The number of places in Soviet creches, 1913-59
 II-3. Total, urban and rural preschool educational facilities, enrollments and teachers in the U.S.S.R. for selected years, 1914-59
 II-4. Enrollment in Soviet schools for working and rural youth and schools for adults, by type of school and level of grade, 1950-59
 II-5. Curriculum of schools for working youth, pre-1957
 II-6. Curriculum of evening, alternating shift and seasonal schools, grades 3-8, 1959-60
 II-7. Curriculum of evening, alternating shift and seasonal upper secondary schools, grades 9-11, 1959-60
 II-8. Summary comparison of postwar curricular changes in Soviet 10- and 11-year primary and secondary schools..
 II-9. Proportion of pupils studying in Russian language schools by union republic as of 1955-56
 II-10. Comparison of 1960 curriculum in 8-year schools of the Uzbek SSR, Russian and Uzbek language of instruction ..
 II-11. Comparison of 1960 curriculum in 3-year urban secondary schools (grades 9-11) of the Uzbek SSR, Russian and Uzbek language of instruction ..
 II-12. Number of instruction hours de-

Page

	Page
voted to foreign languages in the Soviet school curriculum, 1947-63	114
II-13. Offerings of foreign languages in grades 5-10 of Soviet 7- and 10-year schools, year end 1956 and 1958	115
II-14. Foreign language teachers in Soviet 7- and 10-year schools	116
II-15. Soviet primary and secondary school enrollments in relation to total population, 1914-59	131
II-16. Comparison of Soviet school age populations in 1939 and 1959	136
II-17. Correlation of Soviet school enrollments by level of grade with the respective school population age groups, 1926, 1939, and 1958	138
II-18. Soviet population of youths aged 15-19 and their participation in various levels of schooling, selected years	139
II-19. Regular and alternative equivalent primary and secondary school enrollment in the U.S.S.R., 1940, 1950, 1955, 1958 and 1965 projection	141
II-20. Regular and alternative equivalent primary and secondary school enrollment in the Russian SFSR, 1940, 1950, 1955, 1958 and 1965 projection	141
II-21. Differences in urban and rural enrollments in the U.S.S.R. in 1939	142
II-22. Differences in urban and rural enrollments in the U.S.S.R. in 1958	142
II-23. Proportion of females among pupils in Soviet primary and secondary schools, 1927, 1938, 1950 and 1955	143
II-24. Proportion of females among pupils in the upper grades (8-10) of Soviet secondary schools by union republic, 1955	144
II-25. Rates of enrollments in upper grades (8-10) by republic, 1950 and 1955	145
II-26. Composition of Soviet primary and secondary school enrollment by type of school and level of grade, year end 1956	146
II-27. Average number of pupils enrolled per primary and secondary school in the U.S.S.R. for selected years	146
II-28. Distribution of Soviet elementary schools by number of teachers, 1954-55	146
II-29. Distribution of Soviet elementary schools by number of pupils, 1954-55	146
II-30. Distribution of Soviet 7-year schools by number of individual classes, 1954-55	146

<i>Page</i>	<i>Page</i>		
II-31. Distribution of Soviet 7-year schools by numbers of pupils, 1954-55	147	III-11. General structure of technicum curriculum in agriculture, 1956	180
II-32. Distribution of Soviet 10-year schools by number of individual classes, 1954-55	147	III-12. Number and composition of Soviet medical semiprofessional school graduates by specialty field in 1956	180
II-33. Distribution of Soviet 10-year schools by number of pupils, 1954-55	147	III-13. Distribution of enrollment in semiprofessional schools by field in selected years	190
II-34. Number of teaching shifts in regular Soviet schools, 1955-56	147	III-14. Distribution of acceptances in and graduations from Soviet semiprofessional schools by field, selected years	192
II-35. Retention rate and promotion rate in Soviet primary and secondary schools, 1937-38 and 1954-55	148	III-15. Distribution of acceptances in Soviet semiprofessional schools in 1955	193
II-36. Aggregate teaching staffs in Soviet primary and secondary schools, 1940, 1955 and 1959	151	III-16. Distribution of graduations from Soviet semiprofessional schools in 1955	194
II-37. Enrollment, teachers and student-teacher ratios in Soviet primary and secondary schools, 1938, 1950, 1955 and 1959	152	III-17. Comparison of the composition of Soviet semiprofessional graduating class of 1955 by specialty field and institutional grouping	195
II-38. Number of graduates from the 10th grade of Soviet regular schools, 1934-60	153	III-18. Number and distribution of industrial technicians graduating from Soviet semiprofessional schools by specialty group, in 1950 and 1955	196
<i>Chapter III</i>			
III-1. Number of skilled and semiskilled workers trained in schools of the State Labor Reserve and through individual apprenticeship training programs, 1940-59	158	III-19. Summary of graduations from Soviet semiprofessional establishments by field and period, 1928-59, and 1960-65 projection	196-197
III-2. Total number and composition of students entering State Labor Reserve schools by urban-rural and male-female breakdown, 1940-59	159	III-20. Summary of graduations of Soviet semiprofessional schools, 1928-59	197
III-3. Number of known specialties in Soviet semiprofessional schools as of January 1959	166	III-21. Graduation rates of students from Soviet semiprofessional schools by year and period	199
III-4. Structure of enrollment in Soviet semiprofessional schools by type of attendance, 1940, 1957 and 1959	167	III-22. Numbers of and ratios between semiprofessional and professional graduates in the U.S.S.R., 1928-59 and 1959-65 projection	200
III-5. Comparison of time allocated to different types of activities in the existing and revised technicum curriculum (for construction technicians, specialty code 1202)	173	III-23. Distribution of semiprofessional school enrollment by union republic in 1955-56	201
III-6. Instruction time budget in the revised curriculum for a Soviet technicum of the construction industry (specialty code 1200), 1959	173	III-24. Semiprofessional school enrollment by nationality (1958) compared with the national composition of the U.S.S.R. population (1959)	201
III-7. Basic curriculum of Soviet semiprofessional schools as revised for 1960	174	III-25. Number of semiprofessional schools, enrollment and average size for selected years, 1928-59	203
III-8. General structure of the revised technicum curriculum in the specialties of engineering and industrial technology, 1960	175	<i>Chapter IV</i>	
III-9. General structure of the Soviet technicum curriculum in engineering, with the specialty radio engineering (specialty 0704), 1958	177	IV-1. Number of, enrollment in, and graduations from Soviet universities in selected years, 1940-59	210
III-10. Distribution of agricultural technicum students by specialty field in 1956	179	IV-2. Soviet universities: name and date of founding, number of divisions and specialties in each, and full-time day enrollments	212
		IV-3. Distribution of regular (day) students in Soviet universities by division (<i>fakul'tet</i>) of study, 1955-56	213
		IV-4. Soviet higher educational establish-	

	<i>Page</i>		<i>Page</i>
ments by branch and specialty group as of 1959-60	218	IV-22. Allocation of time in 1955 and 1959 physics curricula	279
IV-5. Number of types of divisions of Soviet higher educational establishments by branch and specialty group as of 1959-60	219	IV-23. Examination schedule in physics curricula	279
IV-6. Total enrollment in Soviet higher education and proportion under the jurisdiction of the Ministry of Higher Education, 1951-56	223	IV-24. Length of terms in physics curricula	279
IV-7. Institutional jurisdiction of Soviet higher educational establishments as of January 1959	224	IV-25. Weekly load in physics curricula	279
IV-8. Number of offerings by specialty groups in Soviet higher educational establishments as of January 1959	227	IV-26. General structure of Soviet university curricula in humanities specialties as of the mid-1950's	281
IV-9. Total number of Soviet higher educational establishments, number of independent schools and divisions and branch units of regular schools offering part-time instruction programs, selected years, 1940-59	231	IV-27. General structure of Soviet university curricula in political economy	282
IV-10. Enrollment in Soviet higher education by type of program, 1940, 1950, 1955-59	232	IV-28. General structure of Soviet engineering curricula, 1952 and 1957	283
IV-11. Relation of first-year higher education acceptances to population of 17- (or 18-) year-olds, 1928-59	262	IV-29. Actual structure of Soviet engineering curricula as of the mid-1950's	284
IV-12. Ratio of applicants to vacancies in various Soviet higher educational establishments, 1956-59	264	IV-30. Comparison of plan of study in institutes of chemical technology, U.S.S.R. vs. United States	288
IV-13. Proportion of entering students with prior work experience among all students in various institutions, 1957-59	267	IV-31. Structure of the 1955 5-year curriculum in engineering economics offered at the Moscow Institute of Engineering Economics	291
IV-14. First-year acceptances in Soviet higher educational establishments by type of program, 1928-60	268	IV-32. Summary of 5-year Soviet teacher training programs in pedagogical institutes, 1957	298
IV-15. Number and proportion of admissions to regular (day) programs of Soviet higher education of persons with prior work experience, 1957-60	270	IV-33. Physics programs broken down by course groups, pedagogical institute vs. university programs	298
IV-16. First-year acceptances in Soviet higher educational establishments by specialty branch for selected years, 1928-59	271	IV-34. Moscow State University: Grades received on spring term examinations, 1956	306
IV-17. Rates of growth in first-year acceptances to Soviet higher education, by branch, 1928-59	273	IV-35. Moscow State University: Students' standing after spring term examinations, 1956	307
IV-18. Distribution of acceptances in Soviet higher educational establishments by specialty branch and type of program, 1955	277	IV-36. Enrollment in Soviet higher educational establishments by branch for selected years, 1928-58	318
IV-19. Summary of 1959 programs of instruction in Soviet universities	277	IV-37. Comparative growth trend in Soviet higher education enrollment by branch, 1928 and 1958	320
IV-20. General structure of science curricula in Soviet universities as of the early 1950's	277	IV-38. Composition of Soviet higher education enrollment by branch and type of program, 1955	321
IV-21. Number of instruction hours in three different physics curricula	279	IV-39. Distribution of extension-correspondence students by branch, 1950-51 and 1955-56	322
		IV-40. Number and composition of engineering-industrial branch enrollment by type of program for selected years, 1940-58	324
		IV-41. Number and composition of graduates in all fields by type of program for selected years, 1940-60	324
		IV-42. Planned and actual number of higher education graduates in all fields by plan periods	324
		IV-43. Average annual graduations from Soviet higher educational establishments, by plan periods	325

	<i>Page</i>		<i>Page</i>
IV-44. Graduations from Soviet higher educational establishments by branch for selected years, 1928-59	328	U.S.S.R. regular higher education enrollment, year end 1956	355
IV-45. Comparative growth trend in graduations from Soviet higher educational establishments, by branch, 1928 and 1959	330	IV-60. Soviet population and higher education enrollment by nationality and index of national representation, 1935 and 1959	359
IV-46. Distribution of graduations from Soviet higher educational establishments, by branch and type of program, 1955	331	IV-61. Capital expenditures on new buildings, maintenance and equipment, in relation to the total budget for Soviet higher education, 1950-57	364
IV-47. Comparison of the composition of Soviet higher education graduating class of 1955 by specialty groups and branches and institutional reporting by branch	333	IV-62. Total teaching staff of Moscow State University: Staff and multiple-job holders as of the academic year 1955-56	368
IV-48. Comparisons of 1955 data on Soviet higher education graduates by specialty group reporting and institutional reporting	334	IV-63. Composition of Soviet teaching staffs, by academic rank, 1946 and 1955	369
IV-49. Number and distribution of Soviet engineering graduates by specialty group reporting, 1950 and 1955	335	IV-64. Distribution of teaching staffs, by branch, 1929, 1940 and 1946	369
IV-50. Summary of graduations from Soviet higher educational establishments by branch and period, 1928-59 and 1959-65 projection	336-337	IV-65. Comparison of rate of growth of students and teaching staffs, 1926-46	369
IV-51. Structure of graduating classes in the U.S.S.R. and the United States	341	IV-66. Higher education enrollments, total teaching staffs, and student-teacher ratios, 1927-59	370
IV-52. Estimated graduation rates for Soviet higher education students, by branch, 1950-55	343	IV-67. Regular enrollment, full-time teaching staffs, and student-teacher ratios, 1927-54	370
IV-53. Proportion of women among students in Soviet higher education enrolled in engineering-industrial institutes, 1956-57	348	<i>Chapter V</i>	
IV-54. Number and proportion of women enrolled in various branches of higher education in the U.S.S.R. and the United States	349	V-1. Soviet institutions conducting aspirantura training, 1960	379
IV-55. Total higher education enrollment and the proportion of women of the local nationality in total enrollment in the Tadzhik SSR, 1959	350	V-2. Rates of rejection of persons proposed for advanced academic rank and advanced degree award by the <i>VAK</i> , 1947-56	390
IV-56. Composition of Soviet population by social origin (1955), proportion enrolled in higher education (1938) and in the higher educational establishments of Moscow (1958)	352	V-3. Distribution of aspirantura enrollment by branch, 1934-46	394
IV-57. Soviet population, higher education enrollment, distribution of higher education students, and indices of growth by union republic, 1940 and 1958	352	V-4. Distribution of aspirantura students by field of study, 1951-59	395
IV-58. Composition of Soviet regular and extension-correspondence higher education enrollment by union republic, 1956	354	V-5. Distribution of aspirantura students in Soviet higher educational establishments, by year of study, 1946-47	397
IV-59. Distribution by union republic and composition by nationality of		V-6. Annual rates of completion of aspirantura training in relation to total aspirantura enrollment, 1940-59	398
		V-7. Relationship between the completion of aspirantura training and the award of candidate degrees, 1940-59	399
		V-8. The award of candidate degrees by branch and period, 1937-59	402
		V-9. Distribution of candidate degree awards by period, 1937-59	402
		V-10. The award of doctor degrees by branch and period, 1937-59	405
		V-11. Age of candidate degree recipients at the time of the award, 1946-53	408
		V-12. Age distribution of recipients of doctor degrees at the time of the award, 1937-46 and 1947-55	409
		V-13. Distribution of <i>RAP</i> by place of	

	Page
employment and by advanced degree as of Oct. 1, 1955	412
V-14. Distribution of <i>RAP</i> candidate degree holders by place of employment and academic rank as of Oct. 1, 1955 ..	413
V-15. Distribution of <i>RAP</i> doctor degree holders by place of employment and academic rank as of Oct. 1, 1955	414
V-16. Distribution of <i>RAP</i> by place of employment, according to academic rank, Oct. 1, 1955	415
V-17. Number and proportion of <i>RAP</i> employed in higher education, 1940-60	416
V-18. Number and proportion of advanced degree holders among <i>RAP</i> , 1940-60	416
V-19. Proportion of total number of <i>RAP</i> , holding advanced academic rank, 1947-60	416
V-20. Number, composition by field, and factor of growth of <i>RAP</i> in the U.S.S.R., 1955 and 1959	417
V-21. Proportion of <i>RAP</i> without advanced degrees, by field, 1959	418
V-22. Geographic distribution of <i>RAP</i> in the U.S.S.R. for selected years, 1940-59	418
V-23. Age of recipients at the time of appointment to advanced academic rank, 1947-55	419
V-24. Appointment to advanced academic rank by period, 1937-55	419
V-25. Number and proportion of professors who were Communist Party members at the time of their appointment, 1947-56	419
V-26. Number and proportion of associate professors who were Communist Party members at the time of their appointment, 1947-56	420
V-27. Number and proportion of doctor degree holders who were Communist Party members at the time of the award, 1947-56	420
V-28. Nationalities of the U.S.S.R. having a larger share of <i>RAP</i> than their respective share in the total population, 1959	420
V-29. Proportion of Jews among total number of <i>RAP</i> , 1955, 1958 and 1959 ..	421
V-29A. Proportion of women among various categories of <i>RAP</i> , 1947-59	421
V-30. Research and academic personnel employed in Soviet higher educational establishments and research and development organizations, by academic title, advanced degree and sex, 1950 and 1959	422
V-31. Number of and employment in Soviet research establishments, 1960	423
V-32. Aggregate number of Soviet research establishments, 1914-60	425
V-33. Number of research establishments in the U.S.S.R. by type of institution as of January 1 for selected years, 1931-56	426
V-34. Number of "main research institutes," their divisions and research stations in the U.S.S.R. by type, year end 1930-55	427
V-35. Employment of <i>RAP</i> by type of research institution in the U.S.S.R., year end 1931-55	427
V-36. Employment of <i>RAP</i> in the U.S.S.R. in research institutes, by branch, year end 1930-55	428
V-37. Soviet academies of sciences, research institutes and research and academic personnel employed therein as of January 1958 and January 1960	429
<i>Chapter VI</i>	
VI-1. Level of educational attainment of the Soviet population as of January 15, 1959	439
VI-2. Estimated number of persons with less than 7 years of education in the Soviet population aged 15 and over as of 1959	439
VI-3. Level of educational attainment of the United States population aged 14 and over as of March 1959	439
VI-4. Comparison of educational attainment levels in the U.S.S.R. and the United States, 1959	440
VI-5. Comparison of U.S.S.R.-United States levels of educational attainment in relation to population, total and by sex, 1959	440
VI-6. Number and rates of growth of Soviet population of higher education graduates by sex, 1939 and 1959	441
VI-7. U.S.S.R. population of persons 15 years of age and older and number of higher education graduates as of January 1939	442
VI-8. Rural-urban differences in the level of educational attainment of the Soviet population, 1959	442
VI-9. Level of educational attainment of the Soviet population by union republic, 1939 and 1959	443
VI-10. Level of educational attainment of the Soviet population by union republic and sex, 1959	443
VI-11. Number of Soviet professional graduates with completed higher education employed in the national economy of the U.S.S.R., total and by sex, for selected years	444
VI-12. Total number and active employment participation of higher education graduates in the civilian labor	444

<i>Page</i>	<i>Page</i>
force of workers and employees in the Soviet Union as of January 1939	445
VI-13. Total number and active employment participation of higher education graduates in the civilian labor force of workers and employees in the Soviet Union as of January 1959	445
VI-14. Total number and active employment of college graduates (4 or more years completed) in the civilian labor force of the United States as of April 1940	446
VI-15. Total number and active employment of college graduates (4 or more years completed) in the civilian labor force of the United States as of March 1957	446
VI-16. Professional and semiprofessional graduates in all fields in the U.S.S.R., 1914, 1918-60, and 1959-65 projection	449
VI-17. Annual attrition rates among Soviet professionals and semiprofessionals in all fields, 1954-58	449
VI-18. Total number of Soviet professional graduates, number and proportion employed in the national economy by year of graduation	450
VI-19. Total number of Soviet semiprofessional graduates, number and proportion employed in the national economy by year of graduation	450
VI-20. Professional graduates of Soviet higher educational establishments by field, 1928-59	451
VI-21. Graduates from Soviet semiprofessional schools by field, 1928-59	452
VI-22. Professional graduates with completed higher education in the U.S.S.R. and college graduates in the United States	453
VI-23. Annual average number of Soviet professional and semiprofessional graduates in all fields and graduates of engineering-industrial branches	455
VI-24. Thirty-year trend (1927-1957) in the supply and attrition of Soviet professionals by field	456
VI-25. Thirty-year trend (1927-1957) in the supply and attrition of Soviet semiprofessionals by field	456
VI-26. Annual attrition rates among Soviet professionals and semiprofessionals by specialty branch, 1955-59	459
VI-27. Growth factor of stock of graduates employed in the national economy of the U.S.S.R., 1957 vs. 1927	460
VI-28. Composition of Soviet professional manpower by branch of specialization as of 1927 and 1957	460
VI-29. Composition of Soviet semiprofessional manpower by branch of specialization as of 1927 and 1957	460
VI-30. Soviet semiprofessional labor force by specialty branch, January 1960 and 1966 projection	461
VI-31. Soviet professional labor force by specialty branch, January 1960 and 1966 projection	461
VI-32. Comparison of growth of the Soviet labor force of workers and employees and specialized manpower, 1928-59 and 1965 projection	463
VI-33. Employment of Soviet professional graduates (1956), as compared with employment of U.S. college graduates (1950), by branch and sector of industry and in relation to total employment	474-475
VI-34. Distribution of professional graduates in the U.S.S.R. (1956) and college graduates in the U.S. (1950) by industry sector	478
VI-35. Distribution by type of administrative subordination of Soviet workers and employees and professionals by field as of Dec. 1, 1957	479
VI-36. Distribution by type of administrative subordination of Soviet workers and employees, professionals and semiprofessionals as of Dec. 1, 1959	479
VI-37. Share of the Russian SFSR in the employment of the U.S.S.R.'s professionals by branch, December 1957	480
VI-38. Number and distribution of Soviet population, employment, semiprofessional and professional manpower, and research and academic personnel, by union republic, late 1950's	480
VI-39. Occupational composition of the Soviet intelligentsia, 1926, 1937, 1956	482
VI-40. Level of educational attainment of the gainfully employed segment of the Soviet population, 1959 census	483
VI-40A. Listing of "mental labor" occupations in the U.S.S.R., the number employed therein, and the ratio of persons with 7 or more years of education so employed per 1,000 persons, 1939 and 1959	484
VI-41. Number of Soviet administrative personnel and their percentage of the total number of workers and employees, 1952-59	486
VI-42. Total employment of workers and employees; leading administrative, managerial and specialized personnel; and employment of specialists with secondary semiprofessional education and professional higher education by branch	486

	<i>Page</i>		<i>Page</i>
and sector of the Soviet economy as of January 1957	488-489	by formal training specialty, December 1959	507
VI-43. Soviet population, labor force and gainful employment by sex, 1958	491	VI-60. Rates of employment of Soviet engineers and technicians per 1,000 production workers, by industry sector, December 1959	508
VI-44. Soviet workers and employees, total and women, 1928 and 1958	492	VI-61. Number and distribution of professionals employed in engineering and other industrial fields by formal training specialty in the Russian SFSR and U.S.S.R. estimates, 1957 and 1959	509
VI-45. Total number of professional higher education graduates employed in the national economy of the U.S.S.R., by specialty field and sex, as of Dec. 1, 1959	493	VI-62. Number and proportion of engineers by training specialty employed in Soviet industry and elsewhere in the economy, 1959	509
VI-46. Relative proportion of women among Soviet professionals, 1929, 1940, 1957 and 1959	493	VI-63. Ratios of white-collar workers and <i>ETMP</i> per 1,000 production workers in selected branches of industry of the Perm' (Molotov) region, 1956 and 1957	511
VI-47. Total number of semiprofessional graduates employed in the national economy of the U.S.S.R., by specialty field and sex, as of Dec. 1, 1957	494	VI-64. Total employment, number of <i>ETMP</i> , and their ratio to the number of production workers in Soviet construction enterprises, selected years	517
VI-48. Total number of semiprofessionals in the Soviet population and semiprofessionals employed in the national economy, by sex, 1959	494	VI-65. Leading administrative, managerial and specialized personnel in Soviet construction enterprises by occupation and sex as of Jan. 1, 1957	518
VI-49. Leading administrative, managerial and specialized personnel in various branches and sectors of the Soviet economy, total and by sex, as of Jan. 1, 1957	495	VI-66. Leading administrative, managerial and specialized personnel in Soviet agriculture by occupation and sex as of Jan. 1, 1957	520
VI-50. Leading administrative, managerial and specialized personnel in Soviet industrial enterprises (intra-unit employment) by occupation and sex as of Jan. 1, 1957	498	VI-67. Number of physicians in the U.S.S.R. by major specialty (excluding military personnel) as of the end of a given year	521
VI-51. Total industrial employment, production workers, <i>ETMP</i> and ratios of <i>ETMP</i> in Soviet industry, 1913-59	500	VI-68. Leading administrative, managerial and specialized personnel in Soviet medical and health care establishments by occupation and sex as of Jan. 1, 1957	522
VI-52. Distribution of <i>ETMP</i> employed in Soviet industrial enterprises by level of formal specialized education, 1928-59	501	VI-69. Leading administrative, managerial and specialized personnel in Soviet educational establishments training specialized manpower by occupation and sex as of Jan. 1, 1957	524
VI-53. Summary of ratios of <i>ETMP</i> per 1,000 production workers by sectors of industry for selected years, 1925-56	503	VI-70. Total employment in research and research (science) service establishments of the U.S.S.R. for selected years, 1928-59	526
VI-54. Employment of Soviet professionals by industry sector as of December 1, 1959	504	VI-71. Leading administrative, managerial, research and specialized personnel in Soviet research institutes and research and development establishments by occupation and sex as of Jan. 1, 1957	527
VI-55. Number and distribution of professionals and of professional engineers by industry sector as of December 1959	505	VI-72. Leading administrative, managerial, research and specialized personnel in Soviet project-making and design organizations by occupation and sex as of Jan. 1, 1957	528
VI-56. Number and distribution of professional engineers employed in Soviet industry, by formal training specialty, December 1959	505		
VI-57. Employment of Soviet semiprofessionals by industry sector as of Dec. 1, 1959	506		
VI-58. Number and distribution of semiprofessionals and of engineering and industrial technicians by industry sector as of December 1959	507		
VI-59. Number and distribution of semiprofessional engineering and industrial technicians employed in Soviet industry,			

	<i>Page</i>		<i>Page</i>
VI-73. Total employment, leading personnel and employment of professional and semiprofessional specialists in Soviet research establishments, as of 1941 and 1957	528	Party membership by branch of the Soviet economy	536
VI-74. Composition of Soviet professional personnel by social origin, 1929 and 1940	530	VI-79. Delegates to Communist Party congresses by level of educational attainment	537
VI-75. Composition of Soviet professionals and semiprofessionals by nationality and sex within national groups, Dec. 1, 1959	531	VI-80. Rating profiles for selected occupations	538
VI-76. Communist Party membership, total, and number and proportion of trained specialists within its ranks, 1929-59	533	VI-81. Approximate wage scale for various Soviet occupations as of the mid-1950's	543
VI-77. Communist Party members among Soviet professionals, 1929-59	534	VI-82. Average monthly wages and wage relatives of production workers, <i>ETMP</i> , and white-collar office employees in select Soviet manufacturing and mining enterprises, 1956	544
VI-78. Total employment, leading personnel, professionals and Communist		VI-83. Historical trend in the wage relatives of <i>ETMP</i> , production workers and white-collar office employees in Soviet industry	544

Charts

I. Pre- and post-reform structure of the Soviet educational system, compared with the United States	faces p. 22	XIII. Composition of enrollment in Soviet higher education by type of program, selected years	232
II. Demographic trends: School enrollment in elementary grades (1-4), 1940, 1946-59	47	XIV. Supply of secondary school graduates in relation to number of acceptances into higher educational establishments, 1928-60	261
III. Changes in the structure of Soviet primary and secondary school curriculum, 1947-63	107	XV. Distribution of first-year entering students in Soviet higher education by type of program, selected years, 1927-59	266
IV. Enrollment in the system of Soviet primary and secondary education of all types, 1927-58 and 1965 projection	132	XVI. Distribution of first-year entering students by field of study, selected years, 1928-59	272
V. Enrollment in Soviet primary and secondary schools by level of grade, 1914, 1920-59 and 1965 projection	134	XVII. Hypothetical structure of instruction programs in Soviet higher education	301
VI. Estimated number and population deficit of 18-year-olds, 1955-67	137	XVIII. Aggregate enrollment in Soviet higher education, 1914, 1920-59	315
VII. Aggregate enrollment in Soviet secondary semiprofessional schools, 1915, 1920-59	187	XIX. Distribution of higher education enrollment by field for selected years, 1928-58	319
VIII. Enrollment in Soviet semiprofessional schools by field, 1929-55	188	XX. Graduations from Soviet higher educational establishments, 1928-60	323
IX. Distribution of enrollment in Soviet semiprofessional schools by field, 1928-55	189	XXI. Average annual graduations from Soviet higher educational establishments, by planning periods	326
X. Graduations from Soviet secondary semiprofessional schools, 1928-59	191	XXII. Composition of higher education graduating classes by field, in selected years, 1928-59	329
XI. Average annual number of Soviet semiprofessional graduates in specialty fields by periods, 1928-59 and 1959-65 projection	198	XXIII. Average annual number of Soviet professional graduates in specialty fields by period, 1928-59 and 1965 projection	338
XII. Proportion of women among Soviet secondary specialized students by field in selected years, 1927-59	202	XXIV. Comparison of total annual higher	

<i>Page</i>		<i>Page</i>
	education graduating classes in the United States and the U.S.S.R., 1940-59	
340	XXV. Proportion of women among Soviet higher education students, by field, in selected years, 1927-59	447
347	XXVI. Advanced degree training—aspirantura enrollment, 1929-59	
393	XXVII. Comparison of number of aspirantura students by field, 1951 and 1959	454
396	XXVIII. Award of first advanced degree, candidate of science, 1937-59	
400	XXIX. Number of candidate degree holders and distribution by field as of 1959	457
404	XXX. Award of second advanced degree, doctor of science, 1934-59	
406	XXXI. Number of doctor degree holders and distribution by field as of 1959	458
407	XXXII. Total population of and gainful employment by sex of higher education graduates in the U.S. and the U.S.S.R.	469
	XXXIII. Comparison of graduates from Soviet higher educational establishments (1928-59) and from U.S. colleges and universities (1926-58) by field	
	XXXIV. Growth in the stock of Soviet professional manpower, by field, 1928-59 and 1965 projection	
	XXXV. Growth in the stock of Soviet semiprofessional manpower, by field, 1928-59 and 1965 projection	
	XXXVI. Comparison of employment of Soviet higher education graduates by branch as of 1941 and 1960	
	XXXVII. Comparison of employment of semiprofessional graduates by branch as of 1941 and 1960	470

Source Abbreviations Used in the Text

Because of the frequency of citation, it was found convenient to abbreviate some of the source titles throughout this volume. For full titles, the reader is referred to the cross-references in the bibliography. A list of the sources which were abbreviated follows:

<i>APS-NarObr—1957</i>	<i>NarKhoz—1932</i>	<i>SotsStroi—1936</i>
<i>ASEE</i>	<i>NarKhoz—1959</i>	<i>Source X</i>
<i>Bartosek, Vysoké</i>	<i>NarKhoz—1960</i>	<i>Source Y</i>
<i>Beilin, Kadry</i>	<i>NarKhoz-RSFSR—1959</i>	<i>Source Z</i>
<i>BSE-1st</i>	<i>NarKhoz—SBX</i>	<i>SPM</i>
<i>BSE-2d</i>	<i>NarObr RR—1943</i>	<i>Sprav SSU</i>
<i>BSE-SSSR—1948</i>	<i>NarObr RR—1944</i>	<i>Sprav VUZ (with appropriate year)</i>
<i>BSE-SSSR—1957</i>	<i>NKh—1956</i>	<i>SSO</i>
<i>BSE-YB—1957</i>	<i>NKh—1957</i>	<i>SSSR-Tsif—1958</i>
<i>BSE-YB—1958</i>	<i>NKh-RSFSR—1957</i>	<i>SSSR-Tsif—1959</i>
<i>Deineko, Spravochnik</i>	<i>OE-USSR</i>	<i>SSSR-Tsif—1960</i>
<i>Direktivy-SBX—1957</i>	<i>Plan kadrov—1930</i>	<i>Tretii FYP</i>
<i>Dos—1957</i>	<i>Plan Khoz</i>	<i>Trud—1935</i>
<i>Eliutin-VSSS—1959</i>	<i>Plan 1935</i>	<i>Trud—1936</i>
<i>Galkin, Nau Kadry</i>	<i>Plan 1936</i>	<i>VAN</i>
<i>Gorokhoff, Materials</i>	<i>Plan 1937</i>	<i>Voznesenskii, Voennaia</i>
<i>Itogi pervogo FYP</i>	<i>Plan 1941</i>	<i>Vtoroi FYP</i>
<i>KS—1956</i>	<i>Podgotovka</i>	<i>VVSh</i>
<i>KS-RSFSR—1958</i>	<i>SC-Eng—1936</i>	<i>VyShkoSPR—1945</i>
<i>Kul't Stroi—1934</i>	<i>Shtyl'ko, Pod'em</i>	<i>VyShkoSPR—1948</i>
<i>Kul't Stroi—1935</i>	<i>Sinetskii, PP Kadry</i>	<i>VyShkoSPR—1957</i>
<i>Kul't Stroi—1940</i>	<i>SotsStroi—1933—38</i>	<i>Zhenshchina</i>
<i>Medynskii—1947</i>	<i>SotsStroi—1934</i>	<i>Zhirnov, Kul'turnoe</i>
<i>Medynskii—1952</i>	<i>SotsStroi—1935</i>	
<i>Medynskii—1955</i>		

for the training of specialists with completed higher education and planning of the proper location of higher educational establishments in conjunction with the future development of the national economy, culture and education should be improved.

(b) Work places and technical positions should be reserved in enterprises and offices for higher education students, who undertake industrial practice or who study without leave from active employment.

(c) There should be an expansion of the material and technical base of higher educational establishments and construction of new study and laboratory facilities, especially in the eastern [Asiatic] regions of the republic. The construction of dormitory facilities is to be expanded to the complete satisfaction of the need for accommodation of all out-of-town students. Manufacturing facilities are to be established for making all essential laboratory and teaching equipment, visual aids, experimental facilities and equipment required by higher educational establishments.

(d) Higher educational establishments with a single profile [i.e., specialty group] located in the same city should be merged. Furthermore, some research institutions are to be merged with higher educational establishments.

(e) Agricultural higher educational establishments are to be provided with land in accordance with the established regulations.

Article 52: Other republics

U.S.S.R.—The following clauses are different in the U.S.S.R. law: (1) adds that special publishing offices and printing facilities should be established to service higher educational establishments; (2) adds that additional benefits should be granted to students in the upper courses of higher educational establishments and technicums who study while employed; (3) omits the statement about creating production facilities at higher educational establishments.

Ukraine—Identical with U.S.S.R.

Armenia—Identical with RSFSR.

Latvia—Omits Paragraphs (a), (b), (d), and (e) of RSFSR law. Omits the statement about the need for the creation of a production base. Adds the statement about textbooks and teaching aids. Adds clause (2) of the U.S.S.R. law, but refers only to higher educational establishments and not to technicums.

Lithuania—Paragraphs (b), (d), and (e) of RSFSR law omitted. Omits also statement about the need to create a production base. Adds a statement that the "existing excessive parallelism" in the preparation of specialists with higher education should be eliminated. Adds clause (1) of the U.S.S.R. law.

Moldavia—Omits Paragraphs (b), (d) and (e) of RSFSR law. Omits the statement about the need to create a production base. Adds the clause about the need for the improvement of public food catering and the clause about the need for an abundant supply of texts and study aids.

Tadzhikistan—Omits Paragraphs (a) and (e) of the RSFSR law. Omits the statement about the need to create a production base. Adds clause about the need to improve food catering as well as clause (1) of the U.S.S.R. law.

Turkmenia—Omits Paragraphs (b), (d) and (e) of the RSFSR law. Omits the statement about the need for the creation of a production base.

Uzbekistan—Omits Paragraph (e) of the RSFSR law and the statement about the need to create a production base. Adds clause (1) of the U.S.S.R. law.

Azerbaidzhan—Nothing about dormitories. Omits Para-

graphs (d) and (e) of RSFSR law. Adds clause (1) of the U.S.S.R. law.

Belorussia—Omits Paragraph (e) of the RSFSR law. Adds clause (1) of the U.S.S.R. law and adds the statement that public food catering should be improved.

Estonia—Omits Paragraphs (b), (d) and (e) of RSFSR law. Omits the statement about the construction of dormitory facilities. Omits statement that there should be production facilities created at higher educational establishments. Adds that there should be enough texts and study aids both in Estonian and Russian available to students in higher education, particularly for those studying without leaving active employment.

Georgia—Omits Paragraphs (b) and (e) of the RSFSR law. Omits the statement about the need to establish production bases at higher educational establishments. Adds that public food catering should be improved.

Kazakhstan—Omits Paragraphs (a), (b), (d) and (e) of the RSFSR law. Omits the statement about the need to create a production base. Adds clause (1) of the U.S.S.R. law as well as a statement that existing higher educational establishments should be expanded and new ones established in the region.

Kirgizia—Omits paragraphs (b), (d) and (e) of the RSFSR law. Omits the statement about the need to establish production base. Adds a clause about the need for an abundant supply of texts and study aids both in Russian and Kirgiz languages, particularly for students in evening and extension-correspondence divisions.

* * *

The individual articles of the educational reform law have been presented in this appendix using the RSFSR law as a base. The articles of the U.S.S.R. law and the laws of the other republics were then compared with the articles of the RSFSR law. The reader is reminded that in terms of time sequence, it was the U.S.S.R. law which appeared first and then the laws for the 15 republics were adopted at meetings of the Supreme Soviets of the respective republics. It is evident that the laws of the individual republics have greater similarity to the RSFSR law than to the U.S.S.R. law. The concluding statement of the U.S.S.R. law, which in shorter form is also present in all the other laws, is as follows:

The union-republic Councils of Ministers shall submit to the union-republic Supreme Soviets proposals stemming from this law which will ensure that the ties between the school and life are strengthened, that universal compulsory 8-year education is instituted and that general secondary, technical vocational, specialized secondary and higher education in the republics is expanded.

The U.S.S.R. Supreme Soviet considers that bringing the schools closer to life will create the necessary conditions for the better rearing of the growing generation, which will live and work under communism. The reorganization of the public education system will be of enormous importance to the further material and spiritual development of Soviet society, will enhance the role of the Soviet school in the education and upbringing of young people, will better assure the training of highly qualified personnel for all branches of the national economy, science and culture and will contribute in even greater measure to the growing might of the Soviet Union.

Appendix to Chapter II

TABLE II-A-0.—Total, Urban and Rural Pre-school Educational Facilities, Enrollment and Teachers in the U.S.S.R., 1914-1959

TABLE II-A-1.—Aggregate Enrollment (Full- and Part-time) of All Types in Soviet Primary and Secondary Schools, 1914, 1922-59 and 1965 Projection

TABLE II-A-2.—Total, Urban and Rural Enrollment in Primary and Secondary Schools of General Education by Type of School in the U.S.S.R., 1914, 1922-40, 1945-59

Supplement to Table II-A-2

TABLE II-A-3.—Total, Urban and Rural Enrollment in Primary and Secondary Schools of General Education in the U.S.S.R., by Level of Grades, 1914, 1922-40, 1945-59

TABLE II-A-4.—Estimates of Hypothetical Population Age Cohort of 18-Year-Olds in the Soviet Union for 1955-67

TABLE II-A-5.—Population of the U.S.S.R. by Age Groups and Sex in Accordance with the Soviet Population Censuses of 1926, 1939 and 1959

TABLE II-B-1.—General Curriculum of Soviet Primary and Secondary School as of 1947

TABLE II-B-2.—General Curriculum of Soviet Primary and Secondary School as of 1952

TABLE II-B-3.—General Curriculum of Soviet Primary and Secondary School as of 1955

Supplement to Table II-B-3

TABLE II-B-4.—General Curriculum of Soviet Primary and Secondary School as of 1957

TABLE II-B-5.—General Curriculum of Soviet Primary and Secondary School Introduced in 1959

TABLE II-C-1.—Graduations in the U.S.S.R. from the 10th Grade of the Complete Secondary School or its Equivalent, 1927-60, and 1965 Projection

TABLE II-D-1.—Total Number of Teachers in Soviet Primary and Secondary Schools, 1914, 1922-59

TABLE II-D-2.—Distribution of Soviet Primary and Secondary School Teachers by Grade Level, Urban-Rural Employment, Sex and Experience in 1955-56

TABLE II-D-3.—Distribution of Soviet Primary and Secondary School Teachers by Grade Level, Sex, Education and Experience in 1958-59

TABLE II-D-4.—Distribution of Intermediate (5-7) and Upper (8-10) Grade Teachers by Subject Matter and Education in 1955-56

TABLE II-D-5.—Distribution of Intermediate (5-7) and Upper (8-10) Grade Teachers by Subject Matter and Education in 1958-59

TABLE II-F-1.—Number of Soviet Primary and Secondary Schools, by Type of School, 1914, 1922-59

TABLE II-A-0.—*Total, urban and rural preschool educational facilities, enrollment and teachers in the U.S.S.R., 1914-59*

Year	Total			Urban			Rural		
	Number of nursery schools	Enrollment (thousands)	Teachers (thousands)	Number of nursery schools	Enrollment (thousands)	Teachers (thousands)	Number of nursery schools	Enrollment (thousands)	Teachers (thousands)
1914....	275	7.0	6.1	1,932	99.1	5.8	223	8.4	4
1927....	2,155	107.5	52.1	10,979	710.2	37.9	8,632	351.5	14.1
1932....	19,611	1,061.7	52.1	12,505	697.6	47.4	12,030	347.7	24.1
1937....	24,535	1,045.3	71.5	14,427	906.4	55.0	9,572	266.1	20.2
1940....	23,999	1,171.5	75.2	17,932	1,113.6	77.7	10,504	357.4	23.7
1945....	28,436	1,471.0	101.3	17,539	973.5	74.9	10,123	309.7	22.6
1946....	27,662	1,283.2	97.5	17,242	961.2	73.8	10,004	292.4	22.3
1947....	27,246	1,253.6	96.2	17,046	838.5	69.8	9,097	216.2	19.5
1948....	26,143	1,054.7	89.3	16,792	884.5	69.9	8,707	204.1	18.3
1949....	25,499	1,088.6	88.2	17,055	958.1	74.3	8,569	210.7	18.3
1950....	25,624	1,168.8	92.6	17,638	1,036.8	78.8	8,699	220.2	18.8
1951....	26,337	1,256.9	97.6	18,325	1,121.1	85.2	8,815	231.5	19.4
1952....	27,140	1,352.6	104.6	19,097	1,195.0	97.3	9,161	242.3	20.9
1953....	28,258	1,438.3	118.1	20,016	1,305.3	107.5	9,880	272.1	23.5
1954....	29,896	1,577.4	131.0	20,961	1,422.6	117.2	10,635	308.3	26.6
1955....	31,596	1,730.9	143.8	22,100	1,541.4	126.5	11,700	340.6	29.4
1956....	33,800	1,882.0	155.9	22,400	1,722.6	139.8	12,000	372.5	31.7
1957....	34,400	2,095.0	171.5	24,300	1,947.6	157.5	12,500	410.1	34.4
1958....	36,800	2,357.7	191.9	26,300	2,197.3	177.1	13,600	473.8	39.3
1959....	39,900	2,671.1	216.4						

Sources and Notes: The statistics in this table refer to "full-time" (regular-day) nursery schools. In addition, there are so-called seasonal (or summer) supervised playgrounds and nursery schools which serve about one million children. *KS-1956*, pp. 190-91; *NKh-1956*, p. 276;

Das-1957, p. 349 (this source reports for 1957 the preliminary figure of 2,065,000); *SSSR-Tsif-1958*, p. 439; *NarKhoz-1959*, p. 821; *NarKhoz-1960*, pp. 736-37.

TABLE II-A-1.—Aggregate enrollment (full- and part-time) of all types in Soviet primary and secondary schools, 1914, 1922-59 and 1965 projection
(All figures in thousands)

x within present boundaries of U.S.S.R.
z within pre-1939 boundaries of U.S.S.R.

Within pre-1939 boundaries of U.S.S.R.
P-Planned.

SOURCES AND NOTES TO TABLE II-A-1

Explanation of Columns

Year End Reference.—For example, 1938 means either the academic year 1938-39, or reported date as "fall 1938" in primary sources. It also refers to the usual official procedure of reporting data "at the end of the year" (with actual statistics compiled as of either September 15 or October 20 of that year).

A abc.—Aggregate enrollment in schools of general education derived as a sum of Col. B-abc and C-abc and verified independently from primary sources.

a.—In the respective Columns A,B,C,D,E,F, aggregate enrollment.

b.—In the respective Columns A,B,C,D,E,F, enrollment in upper-grades 8-10 only.

c.—In the respective Columns A,B,C,D,E,F, enrollment in the 10th grade only.

B abc.—Regular full-time primary and secondary schools.

C abc.—Adult education of all types, sum of D, E, and F.

D abc.—Evening schools for adults—schools for working youth.

E abc.—Evening schools for adults—schools for rural youth.

F abc.—All other types of schools for adults.

G.—*Rabfak*—university preparatory for workers—adult education equivalent to secondary schools.

H.—*"SSP"*—total enrollment in secondary semiprofessional schools of all types. Since 1949 an increasingly heavy enrollment in evening and extension-correspondence divisions, i.e., part-time education, has taken place, for which adjustment was not made.

I.—*"VTLR"*—Total enrollment in vocational, technical and labor reserve trade schools of all types. In the pre-1940 period, enrollment in *FZO*-type schools and equivalent.

J.—Aggregate enrollment in formal education on primary and secondary level, as a sum of total enrollments *Aa*, *G*, *H*, *I*.

K.—Enrollment on secondary school level or equivalent, as a sum of upper-grade enrollment and other equivalents—*Ab*, *G*, *H*, *I*.

Place in Table Source and Discussion

Aa, Ab 14z, 50, 55, 56.—*NKh-1957*, p. 244. This source reports enrollments for 1940: total—35,328,000 and for grades 8-10—2,558,000. These two figures are slightly lower than those incorporated in the table from *Dos-1957*, p. 273 (see below).

Aa, Ab 14z, 14x, 27, 40, 45, 56.—*Dos-1957*, p. 273. This source (p. 274) states explicitly that the totals include schools for working and rural youth, adults and *rabfak* students.

Aa, Ab 14z, 14x, 27, 40, 45, 57.—*Vestnik statistiki*, No. 10, 1958, p. 91 (1956 is omitted in this source).

Aa, 36, 57.—*Izvestia*, Dec. 5, 1958. This source states for 1936 the figure 28,300,000, as contrasted to the 28,333,000 obtained by addition.

Aa, Ab 54.—*NKh-1956*, p. 222.

Aa, Ab 57.—*SSSR-Tsif-1958*, p. 349. Also in *Vestnik statistiki*, No. 10, 1958, p. 91.

Ba 14x, 22-40, 45-55.—*KS-1956*, pp. 76-77.

Ba 56.—*NKh-1957*, p. 246.

Ba 57.—*SSSR-Tsif-1958*, p. 352.

Bb 14z, 22-40, 45-55.—*KS-1956*, p. 122.

Bb 56.—*NKh-1957*, p. 246.

Bb 57 and 58.—See Appendix Table II-A-3.

Babc 27, 40, 50, 55, 56.—*NKh-1957*, p. 246.

Bc 33-35.—*Kul't Stroi-1935*, p. 17 (see also Appendix Table II-C-1).

Babc 54.—*NKh-1956*, p. 224.

Ca 22, 25, 28-30, 34-40, 45-55.—*KS-1956*, pp. 76-77.

Ca 56.—By addition of *Cb* and *Cc*.

Ca 57.—By subtraction of *Bb-57* from *Ab-57*.

Da, Ea 45.—*KS-1956*, pp. 116-19.

Da, Db, Ea, Eb, Fa, Fb, 50-55.—*KS-1956*, pp. 116-21, 156-57.

Da, Db, Dc, Ea, Eb, Ec, Fa, Fb, Fc 45, 50, 55, 56.—*NKh-1957*, p. 248.

Da, Db, Dc, Ea, Eb, Ec, Fa, Fb, Fc 54.—*NKh-1956*, p. 225.

Ea 22-38.—*Kul't Stroi-1940*, p. 94.

G 22-40.—*Kul't Stroi-1940*, p. 100; and *KS-1956*, pp. 76-77 (figures for 22-38 same as in *Kul't Stroi-1940*, p. 100).

H 14z, 14x, 22-40, 45-58.—Appendix Table III-A-1-E and sources to it.

I 14z, 14x, 27, 40, 45, 56.—*Dos-1957*, p. 273.

I 57.—*Vestnik statistiki*, No. 10, 1958, p. 91.

I 29-38.—*Kul't Stroi-1940*, p. 207.

I 47.—A. N. Veselov, *Nizshee professional'no-tehnicheskoe obrazovanie v RSFSR*, Moscow, 1955, p. 252.

I 50.—Author's estimate derived as a residual of reported grand total enrollment (37 million) minus the sum of the components.

All columns for 27, 40, 50, 53-58.—*NarKhoz-1959*, pp. 806-09, 814, 817.

All columns for 1959.—*NarKhoz-1960*, pp. 725, 732. Prior to the release of this handbook, slightly different figures were given. *Pravda*, Jan. 22, 1960 (Itogi 1959), states that the aggregate primary and secondary enrollment increased from 1958 to 1959 by 1,850,000, which would give a total of 33,333,000 for 1959. *SSSR-Tsif-1959*, p. 206, states for *Ba* and *Ca* the figures 31 million and 2.3 million respectively.

Aa 65P.—*Pravda*, Dec. 24, 1958 (Kairov speech) reports the grand total in all "general education schools" as 45.3 million (as compared with a chart in *Izvestia*, Dec. 5, 1958, which explicitly compares for 1936, 1957 and 1965 the "number of students enrolled in all types of general education schools" as 28.3, 30.6 and 38 to 40 million respectively [p. 4]).

Ca 65P.—*Pravda*, Dec. 24, 1958 (Kairov speech), states that the grand total (*Aa*) will be 45.3 million, of which 4.8 million will be enrolled in schools for working and rural youth.

TABLE II-A-2.—*Total, urban and rural enrollment in primary and secondary schools of general education by type of school in the U.S.S.R., 1914, 1922-40, 1945-59*
(All figures in thousands)

Year end ^a	Aggregate enrollment			Enrollment by type of school											
				Elementary or 4-year *			Elementary-junior secondary or 7-year †			Elementary-complete secondary or 10-year ‡			Other schools (for ex- ceptional children) §		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
1914 ^b	7,896	1,779	6,117	7,030	965	6,065	230	192	38	636	621	15	.....	.....	.....
1922	7,322	1,808	5,514	5,993	958	5,035	737	378	359	592	472	120	(negl.)	(negl.)	(negl.)
1923	7,962	2,030	5,932	6,328	963	5,365	957	511	446	670	548	122	8	8	(negl.)
1924	9,201	2,292	6,909	7,182	1,012	6,170	1,292	667	625	716	601	115	12	12	(negl.)
1925	10,220	2,537	7,683	7,853	1,005	6,848	1,618	898	720	707	598	109	42	36	6
1926	10,730	2,631	8,099	8,020	940	7,080	1,846	974	872	791	666	125	73	51	22
1927	11,466	3,220	8,246	8,427	1,114	7,313	2,084	1,264	820	858	782	75	97	60	37
1928	12,068	3,360	8,708	8,770	1,090	7,680	2,204	1,297	907	978	897	81	116	76	41
1929	13,516	3,570	9,946	9,845	1,093	8,752	2,425	1,365	1,060	1,118	1,032	86	128	80	48
1930	17,614	3,825	13,789	12,850	1,059	11,791	4,194	2,361	1,832	384	337	46	187	68	119
1931	20,933	4,562	16,371	13,456	1,276	12,180	7,087	3,190	3,897	4	4	(negl.)	386	93	293
1932	21,397	4,834	16,563	12,092	1,192	10,901	7,921	2,394	5,527	1,243	1,181	62	140	68	73
1933	22,096	5,228	16,868	11,810	1,278	10,532	8,150	2,049	6,101	2,012	1,811	201	124	90	34
1934	23,539	6,062	17,476	11,076	1,462	9,614	9,168	1,955	7,213	3,170	2,532	638	125	113	11
1935	25,555	6,971	18,584	10,887	1,545	9,341	10,052	2,104	7,948	4,481	3,190	1,291	135	131	4
1936	27,611	7,841	19,770	10,876	1,586	9,290	10,670	2,153	8,518	5,971	4,022	1,949	94	81	13
1937	29,562	8,680	20,882	10,925	1,603	9,322	11,167	2,257	8,909	7,354	4,751	2,603	116	89	47
1938	31,517	9,375	22,142	10,646	1,502	9,144	11,712	2,243	9,469	9,028	5,554	3,474	131	77	54
1939 ^c	32,186	9,929	22,257	9,517	1,389	9,129	11,706	2,077	9,629	10,835	6,381	4,453	128	82	46
1940 ^d	34,784	10,776	24,008	9,786	1,370	8,416	12,525	2,181	10,344	12,199	7,117	5,082	274	108	166
1945	26,094	7,906	18,188	9,430	1,452	7,977	9,558	2,063	7,494	7,021	4,328	2,693	85	62	23
1946	28,582	9,292	19,290	10,499	1,868	8,631	10,456	2,497	7,959	7,551	4,874	2,677	76	54	22
1947	29,470	9,885	19,585	10,858	2,060	8,798	10,862	2,747	8,115	7,671	5,016	2,655	79	62	17
1948	31,542	10,754	20,788	10,626	2,121	8,505	12,443	3,149	9,294	8,383	5,415	2,968	90	69	21
1949	33,223	11,472	21,751	9,308	1,994	7,315	14,620	3,528	11,092	9,189	5,867	3,321	105	83	23
1950	33,314	11,751	21,563	7,518	1,641	5,877	15,509	3,640	11,869	10,171	6,380	3,791	116	91	25
1951	32,452	11,847	20,605	5,887	1,312	4,575	14,804	3,320	11,484	11,641	7,119	4,522	120	97	24
1952	30,953	11,833	19,120	4,503	1,022	3,481	13,599	3,112	10,488	12,726	7,598	5,128	125	102	23
1953	30,208	12,163	18,045	3,728	882	2,846	12,228	2,816	9,412	14,123	8,361	5,762	129	104	24
1954	29,553	12,370	17,183	3,546	841	2,705	10,729	2,451	8,278	15,149	8,974	6,174	129	104	26
1955	28,217	12,126	16,092	3,600	818	2,782	9,372	2,198	7,174	15,129	9,016	6,113	117	94	23
1956	28,185	12,385	15,800	4,060	.....	.....	8,600	.....	.....	15,400	.....	.....	125	.....	.....
1957	28,694	13,000	15,694	4,300	.....	.....	8,500	.....	.....	15,800	.....	.....	100	.....	.....
1958	29,600	13,700	15,900	4,500	.....	.....	8,900	.....	.....	16,100	.....	.....	100	.....	.....
1959	31,000	.....	.....	4,500	.....	.....	10,100	.....	.....	16,300	.....	.....	100	.....	.....

negl.—negligible.

^a Year end refers to the fall of the corresponding academic year.

^b Within boundaries of the U.S.S.R. prior to Sept. 17, 1939 (this refers also to all years 1922-39 inclusive).

^c Excluding enrollment in the annexed territories.

^d Including enrollment in annexed territories.

*For the period 1922-30 refers primarily to schools of the first level (*shkoly pervoi stupeni*).

[†] For the period 1922-30 refers to enrollment in combination schools, which had the first level and first concentrate of the second level schools.

[‡] For the period 1922-30 refers to the combination of the first and second level schools (or the 9-year school).

[§] Schools for exceptional children are those for the deaf, mute, blind, physically handicapped and mentally retarded. Some pupils of orphanages are also included.

SOURCES AND NOTES TO TABLE II-A-2

Place in table Sources and discussion

1914, 1922-56.—*NKh-1957*, p. 246; *KS-1956*, pp. 76-79, 80-85; *Dos-1957*, p. 274. Note: last-figure differences between the totals and the sum of the components, whenever they occur, are due to rounding.

1957.—*NarKhoz-1959*, pp. 812-13. *SSSR-Tsif-1958*, p. 352. Furthermore the following estimates are possible. *Pravda*, Dec. 20, 1957, states that 1957 enrollment was about 28,500,000. *Pravda*, July 24, 1958, states that total general school enrollment increased in 1957 as compared with 1956 by about 500,000 which is actually the approximate magnitude of change (1956: 28,185,000 plus 500,000 gives 1957 as about 28,685,000).

1958.—*NarKhoz-1959*, pp. 812-13. *Izvestia*, Dec. 24, 1958

(Kairov's speech at the Supreme Soviet), stated that actual enrollment in the fall of 1958 was 29,400,000. Anticipated enrollment was to be 29,900,000 (*Pravda*, Dec. 20, 1957), and actual enrollment was short thereof by half a million.

1959.—*SSSR-Tsif-1959*, p. 206; *NarKhoz-1960*, p. 729.

SUPPLEMENT TO TABLE II-A-2

The enrollment in 1914 within the Soviet Union's boundaries, including territories annexed after Sept. 1939, was: Total—9,656,000, of which urban was 2,249,000, rural 7,407,000. Total enrollment in 1920 was: 9,781,000 and in 1921, 8,439,000 (*NarKhoz-1932*, p. 507). The estimated enrollment during the Second World War was in 1941: 19,617,000; 1942-15,667,000; 1943-19,934,000; 1944-22,625,000 (*SPM*, pp. 264, 267).

TABLE II-A-3.—*Total, urban and rural enrollment in primary and secondary schools of general education in the U.S.S.R., by level of grades, 1914, 1922-40, 1945-59*
(All figures in thousands)

Year end *	Aggregate enrollment ^b			Enrollment by level of grades								
				Grades 1-4 ^c			Grades 5-7 ^d			Grades 8-10 ^e		
	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural
1914 ^f	7,896	1,779	6,117	7,390	1,354	6,036	383	305	78	123	120	3
1922....	7,322	1,808	5,514	6,607	1,308	5,299	617	424	194	98	76	22
1923....	7,962											
1924....	9,190	2,280	6,909	8,352	1,669	6,683	692	487	205	146	125	21
1925....	10,178	2,501	7,677	9,178	1,780	7,398	862	600	261	138	120	18
1926....	10,657	2,580	8,077	9,462	1,766	7,697	1,059	696	363	136	118	18
1927....	11,389	3,160	8,209	9,910	2,126	7,784	1,332	919	413	127	114	12
1928....	11,952	3,284	8,667	10,350	2,130	8,220	1,438	1,002	435	165	152	13
1929....	13,388	3,489	9,898	11,583	2,233	9,350	1,615	1,081	533	190	175	15
1930....	17,427	3,757	13,670	15,385	2,538	12,847	1,976	1,163	813	66	56	10
1931....	20,547	4,469	16,078	17,732	3,172	14,561	2,814	1,297	1,517	1	1	negl.
1932....	21,257	4,767	16,490	17,675	3,393	14,282	3,515	1,311	2,204	67	62	5
1933....	21,972	5,138	16,834	17,749	3,611	14,138	4,084	1,403	2,680	139	124	15
1934....	23,414	5,949	17,465	18,280	4,115	14,165	4,848	1,604	3,244	286	230	56
1935....	25,420	6,840	18,580	19,077	4,533	14,544	5,852	1,950	3,902	491	356	135
1936....	27,517	7,761	19,757	20,078	4,957	15,121	6,717	2,318	4,399	723	486	237
1937....	29,446	8,611	20,835	20,755	5,202	15,553	7,677	2,768	4,909	1,013	641	373
1938....	31,386	9,298	22,088	21,202	5,240	15,962	8,780	3,203	5,577	1,404	855	549
1939 ^g	32,058	9,847	22,211	20,472	5,165	15,307	9,715	3,578	6,137	1,871	1,103	767
1940 ^h	34,510	10,668	23,842	21,375	5,335	16,041	10,767	3,965	6,802	2,368	1,369	999
1945....	26,009	7,844	18,165	19,858	5,492	14,366	5,175	1,804	3,371	975	547	428
1946....	28,506	9,239	19,267	22,577	6,800	15,777	4,950	1,855	3,095	979	584	395
1947....	29,391	9,823	19,568	23,494	7,298	16,196	4,957	1,964	2,994	939	561	378
1948....	31,452	10,685	20,767	23,732	7,394	16,338	6,698	2,694	4,005	1,021	597	424
1949....	33,118	11,390	21,728	22,657	7,070	15,587	9,309	3,660	5,649	1,151	660	491
1950....	33,198	11,660	21,538	19,671	6,144	13,527	12,031	4,658	7,373	1,496	858	638
1951....	32,332	11,750	20,582	16,443	5,221	11,222	13,541	5,170	8,371	2,348	1,359	989
1952....	30,828	11,731	19,097	13,394	4,477	8,917	14,087	5,331	8,757	3,346	1,923	1,423
1953....	30,079	12,059	18,020	12,106	4,433	7,673	13,477	5,071	8,405	4,496	2,554	1,942
1954....	29,424	12,266	17,158	12,663	5,103	7,560	11,616	4,299	7,317	5,145	2,864	2,281
1955....	28,101	12,032	16,069	13,579	5,673	7,906	9,268	3,472	5,795	5,253	2,886	2,367
1956....	28,060	12,330	15,730	15,580	6,580	9,000	7,440	3,010	4,430	5,040	2,740	2,300
1957....	28,590	12,870	15,720	17,000	7,260	9,740	7,240	3,280	3,960	4,350	2,330	2,020
1958....	29,600	13,700	15,900	17,700	7,600	10,100	8,400	4,100	4,300	3,400	1,900	1,500
1959....	31,000	14,600	16,400	18,400	8,100	10,300	9,700	4,800	4,900	2,800	1,600	1,200

* Year end refers to the fall or the corresponding academic year and enrollment is reported variably as of Sept. 15 to Nov. 1 of the year.

^b Aggregate enrollment excludes pupils of schools for exceptional children and thus differs from aggregate enrollment reported in Table II-A-2 for most years by the number of pupils enrolled in such schools (Column "Other Schools" in Table II-A-2).

^c Figures include preparatory grade where it exists (also known as "zero grade" in the 1920's and 1930's). For the period of the 1920's the data refer to schools of the first level (*shkoly pervoi stupeni*) or first concentration (*pervyi kontsentrat*).

^d For the period of the 1920's statistics refer to lower forms of schools of the second level (*shkoly vtoroi stupeni*) or second concentration (*vtoroi kontsentrat*).

^e For the period of the 1920's statistics refer to upper forms of the schools of the second level or third concentration (*tretii kontsentrat*). Figures refer to Grades 8-11 whenever applicable.

^f Enrollment within pre-1939 Soviet boundaries.

^g Exclusive of territorial annexations in 1939-40.

^h Enrollment within the present boundaries. Including annexations after Sept. 17, 1939.

SOURCES AND NOTES TO TABLE II-A-3

1914, 1922-55: *KS-1956*, pp. 122-23; 1956: *NKh-1957*, p. 246. 1957 and 1958: *NarKhoz-1959*, pp. 814-15. 1958 and 1959, as well as earlier years from *NarKhoz-1960*, p. 730. Note: —Last-figure differences between the totals and the sum of the components, whenever they occur, are due to rounding.

Before the appearance of *NarKhoz-1959* and *NarKhoz-1960*, the following estimates were made for 1957 and 1958: *Estimate of 1957 total enrollment*: Reported total enrollment (including schools for the physically handicapped) was 28,694,000 (*SSSR-Tsif-1958*, p. 352). Assuming the figure 125,000 (as in 1956) for schools for the physically handicapped, we obtain about 28,570,000 for total enrollment by grade. The actual enrollment now reported in *NarKhoz-1959* is 28,600,000. *Estimate of 1958 total enrollment*: Reported total enrollment is 29,400,000 (*Izvestia*, Dec. 24, 1958). Making an allowance of 100,000 for schools for handicapped children, we obtain about 29,300,000 for total enrollment by grade.

The actual enrollment now reported in *NarKhoz-1959* is 29,500,000.

Estimate of 1957 enrollment in grades 8-10: At the 13th Congress of the Komsomol its secretary, A. N. Shelepin, stated that "in the current academic year there were about [slightly more than] 4,000,000 students in grades 8-10." This statement, which reveals a decline in upper-grade enrollment by about 1,000,000 between the fall of 1956 and of 1957, may be checked as follows. Enrollment in grades 8-10 in the fall of 1957 in schools under the jurisdiction of the Ministry of Education of the Russian SFSR was 2,123,000 (*Uchitel'skaya gazeta*, April 3, 1958; Minister of Education E. I. Afanasev's speech), as compared with 2,561,200 a year earlier (*KS-RSFSR-1958*, pp. 204-05). Note that references are to schools under the RSFSR Ministry of Education only. The Ministry of Railroads of the U.S.S.R. controls additional schools (total enrollment in grades 8-10 in 1956 was 2,728,800). Assuming the RSFSR's proportion in the U.S.S.R.'s total was 50.8 percent (as it was in 1956), we obtain an estimated

enrollment in grades 8-10 of 4,180,000 for 1957. This latter figure is in close agreement with the statement by Shelepin. The actual enrollment now reported in *NarKhoz-1959* is 4,350,000.

Estimate of 1958 enrollment in grades 8-10: The 1958 enrollment in grades 8-10 may be derived in two ways. *Izvestia*, Dec. 24, 1958 (Kairov's speech), states that enrollment in grades 1-7 in 1958 was 26,000,000. Subtracting this from the total enrollment, we get 3,400,000. The second way is more complicated. 1958 enrollment in the RSFSR (all types of schools) in all grades was 16,500,000, and in grades 1-7 was 14,900,000 (*Izvestia*, Dec. 25, 1958 [Afanasenko's speech]). Thus in grades 8-10 there were 2,600,000 students in general education and working and rural youth schools. The estimated enrollment in grades 8-10 of working and rural youth schools was 650,000 (25

percent of the total enrollment in grades 8-10). Thus enrollment in grades 8-10 of regular schools was 1,950,000. The RSFSR accounts for 54 percent of the U.S.S.R.'s enrollment in grades 8-10, and therefore the estimate of 1958 enrollment in grades 8-10 for the U.S.S.R. is 3,611,000. The estimate of 3,600,000 was incorporated into the table. Enrollment in grades 8-10 in schools for working and rural youth was about 1,500,000. Total upper-grade enrollment in all types of schools was about 5,100,000. Apparently by withholding recent figures and aggregating enrollment in various schools, what the Russians are trying to do is to conceal the drop in enrollment in the upper grades. Should the statistics be released in the future, this drop will become evident. The actual enrollment now reported in *NarKhoz-1959* is 3,400,000.

TABLE II-A-4.—Estimates of hypothetical population age cohort of 18-year-olds in the Soviet Union for 1955-67
(All figures rounded in millions)

Year	Actual enrollment, grades 1-4	Hypothetical population estimates by age groups						Year
		Age group 7-10		Age group 7-10		18-year-olds		
		X	A	AI	B	BI	AII	BII
1946.....	22.6	18.08	4.52	18.83	4.70	4.38	4.55	1955
1947.....	23.5	18.80	4.70	19.58	4.89	4.55	4.74	1956
1948.....	23.7	18.96	4.74	19.75	4.94	4.59	4.78	1957
1949.....	22.7	18.16	4.54	18.91	4.73	4.40	4.58	1958
1950.....	19.7	15.76	3.94	16.41	4.10	3.81	3.97	1959
1951.....	16.4	13.12	3.28	13.66	3.41	3.18	3.30	1960
1952.....	13.4	10.72	2.68	11.16	2.79	2.60	2.70	1961
1953.....	12.1	9.68	2.42	10.08	2.52	2.34	2.44	1962
1954.....	12.7	10.16	2.54	10.66	2.66	2.46	2.57	1963
1955.....	13.6	10.88	2.72	11.33	2.83	2.63	2.74	1964
1956.....	15.6	12.48	3.12	13.00	3.25	3.02	3.15	1965
1957.....	17.0	13.60	3.40	14.66	3.66	3.29	3.55	1966
1958.....	18.0 ^a	14.40	3.60	15.00	3.75	3.49	3.63	1967

^a Officially reported in *NarKhoz-1959*, as 17,700,000.

SOURCES AND NOTES TO TABLE II-A-4

X.—Actual enrollment. Data same as in appendix table II-A-3 above. These estimates were made on the basis of data prior to the publication of *NarKhoz-1959*, where enrollment in grades 1-4 for 1958 was reported as 17,700,000 instead of 18,000,000 used in the table.

A.—Hypothetical age cohort of 7- to 10-year-olds derived on the assumption that school enrollment constitutes 125 percent of the respective age group.

AI.—Hypothetical age group of 9-year-olds, derived by dividing the figures in Column A by four.

B.—Hypothetical age cohort of 7- to 10-year-olds, derived on the assumption that school enrollment constitutes 120 percent of the respective age group.

BI.—Hypothetical age group of 9-year-olds derived by dividing figures in Column B by four.

AII and BII.—Hypothetical age group of 18-year-olds, derived by applying the age specific mortality rates (Lorimer, *The Population of the Soviet Union*, p. 124, which gives these rates for 1938-39 on the basis of which cumulative survival rate of 969 per 1,000 was computed for 18-year-olds upon 9-year-olds).

General note.—The estimating procedure applied above is

based on the assumption of invariable correlation of school enrollment to the respective age cohort. The correlation of 124 percent was true for 1938-39 data (see *SPM*, p. 49, and text in Ch. II above), when actual enrollment was correlated with the actual population. The data for 1953-55 (*KS-1956*, pp. 172-73) suggest that the cumulative rate of repeaters in grades 1-4 would account (if no drop-outs take place because of the compulsory schooling requirement) for the swelling of the school enrollment in grades 1-4 to 129 percent of its normal size. Despite the compulsory schooling requirement, there evidently are drop-outs which reduce the correlation ratio.

The reader should be aware that these estimates are derived under simplified assumptions. A number of population studies which are made under governmental and academic auspices use Soviet school statistics for population estimates by age cohort by applying varying assumptions and variable correlation ratios. In this study it was decided to forego complicating refinements for the sake of straight-forwardness. Furthermore, it should be noted that in the opinion of this researcher, the derivations above of the hypothetical age cohort of 18-year-olds result in maximal estimates.

TABLE II-A-5.—Population of the U.S.S.R. by age groups and sex in accordance with the Soviet population censuses of 1926, 1939 and 1959
(All figures in thousands)

Official census reportings of population groupings	December 17, 1926			January 17, 1939			January 17, 1959			(E)
	Total	Male	Female	Total	Male	Female	Total	Male	Female	
0-9 (0-7)	38,593	18,888	18,705	39,308	19,765	19,543	39,833	43,476	46,363	23,608 (18,888)
(0-4)	22,323	11,238	11,085	31,412	11,028	10,779	31,595	(34,784)	(38,088)	22,755 (18,200)
(5-9)	15,270	7,650	7,620	17,501	8,737	8,764	(21,625)	(23,638)	(14,278)	(7,210)
10-14 (10-15)	17,091	8,643	8,448	20,976	10,465	10,521	(24,665)	(28,365)	(14,042)	(17,133)
(8-11)	11,226	5,647	5,579	16,409	8,512	8,512	(16,476)	(20,042)	(14,982)	(8,653)
(12-14)	11,521	5,834	5,687	13,336	8,110	8,319	(17,019)	(17,387)	(8,565)	(8,856)
15-19	16,977	8,133	8,844	16,429	8,110	8,319	(12,158)	(12,198)	(17,757)	(17,530)
(16-19)	16,776	17,292	37,415	18,575	18,840	18,840	(36,823)	(41,395)	(14,675)	(7,413)
(10-19)	34,068	16,776	17,292	14,371	7,164	7,207	15,768	20,343	16,066	7,262
20-24	13,813	6,712	7,01	16,449	7,937	8,512	18,520	18,190	16,056	10,287
25-29	10,037	5,490	6,547	16,449	7,194	7,194	15,288	15,533	16,999	10,388
(20-29)	23,850	12,202	11,648	30,820	15,101	15,719	30,903	31,808	11,590	15,742
30-34	9,065	4,297	4,768	13,735	6,541	6,418	12,958	12,556	14,528	7,062
35-39	8,452	3,992	4,458	11,748	5,330	5,330	13,612	25,521	30,589	13,139
(30-39)	17,517	8,291	9,226	25,483	11,871	13,748	4,772	4,772	10,408	9,273
40-44	6,955	8,393	3,562	8,520	3,821	3,821	7,776	12,264	4,099	6,410
45-49	5,908	2,893	3,015	6,986	2,821	2,821	8,593	15,334	17,379	13,560
(40-49)	12,863	6,286	6,577	15,327	6,734	6,734	2,690	3,287	2,720	8,704
50-54	5,041	2,343	2,698	5,977	2,690	2,690	2,007	10,922	10,447	6,437
55-59	4,205	1,887	2,318	4,955	2,235	2,235	4,925	4,925	8,699	5,753
(50-59)	9,246	4,205	5,016	10,932	4,925	4,925	4,053	4,053	19,146	6,916
60-69	6,399	2,866	3,533	7,138	3,085	3,085	6,053	8,535	11,736	4,099
70 and over	3,404	1,453	1,551	4,055	1,621	2,454	4,462	4,462	7,972	2,541
(60 and over)	9,803	4,319	5,484	11,193	4,706	6,487	11,185	12,997	19,708	6,640
Unspecified	88	50	38	.....	.....	36	.....	8	8	4
Total population	145,028	71,043	75,985	170,467	81,665	88,802	170,557	190,678	208,827	94,950
Special population groups relevant to school attendance:										
Elementary, ages 8-11.....	11,226	5,647	5,579	16,409	.....	.....	16,476	(20,042)	(14,982)	.....
Jr. secon., ages 12-14.....	11,521	5,834	5,687	13,336	(9,858)	.....	13,387	(17,019)	(8,565)	.....
Sr. secon., ages 15-17.....	10,684	5,159	5,225	.....	.....	.....	(9,120)	(11,241)	(10,193)	.....
School age, ages 8-17.....	33,431	16,640	16,791	39,603	98,991	.....	(38,983)	(48,302)	(33,740)	56,588
Labor force, ages 15-60.....	80,453	.....	.....	.....	.....	.....	97,878	110,873	128,470	71,882

Sources: A and B: F. Lorimer, *The Population of the Soviet Union*, Geneva: League of Nations, 1946, pp. 141, 143, 231-33. Observe that the adjusted grand total population of Nations, 1946, pp. 141, 143, 231-33. Observe that the adjusted grand total population reported is 147,000,000 for 1926. C: *Festniki statistiki*, No. 6, 1956, p. 90. D and E: *Pravda*, Feb. 4, 1960; *Narkhoz-1960*, p. 11. Numbers in parentheses are interpolations, or are derived by addition.

TABLE II-B-1.—General curriculum of Soviet primary and secondary school as of 1947

Subjects of instruction	Primary—complete secondary (10-year) school										(E)	
	Primary (4-year) school					Intermediate grades 5-7						
	Primary (4-year) school		Elementary grades 1-4			Instruction hours per week in grades 1-4		Instruction hours per week in grades 5-7				
1	1	2	3	4	Hours	5	6	7	Hours	Per cent		
<i>Group I: General (languages, literature, humanities and social sciences)</i>												
1. Russian language and literature.....	14	14	15	13,13	1,848	56,0	19	18	15,16	1,233	55,3	
2. Other literature.....	14	14	15	8	1,683	51,0	10	8	6	792	25,2	
3. Total 1-2.....	14	14	15	8	1,683	51,0	10	8	6	792	25,2	
4. Foreign language (German, French, English).....	14	14	15	8	1,683	51,0	10	8	6	792	25,2	
5. History.....	14	14	15	8	1,683	51,0	10	8	6	792	25,2	
6. Constitution of the U.S.S.R.....	14	14	15	8	1,683	51,0	10	8	6	792	25,2	
7. Geography.....	14	14	15	8	1,683	51,0	10	8	6	792	25,2	
8. Psychology.....	14	14	15	8	1,683	51,0	10	8	6	792	25,2	
9. Logic.....	14	14	15	8	1,683	51,0	10	8	6	792	25,2	
<i>Group II: Scientific (mathematics and sciences)</i>												
10. Arithmetic.....	7	7	6	7	891	27,0	7	6	6	231	7,4	
11. Mathematics (algebra, geometry, trigonometry).....	7	7	6	7	891	27,0	7	6	6	231	7,4	
12. General science (nature studies, introductory biology).....	3	3	9	99	3,0	2	3	2	3	231	7,4	
13. Chemistry.....	3	3	2	2	2	2	2	2	2	231	7,4	
14. Physics.....	3	3	2	2	2	2	2	2	2	231	7,4	
15. Astronomy.....	3	3	4	4	462	14,0	3	3	3	297	9,5	
16. Applied (activity, skill and vocational arts).....	3	3	4	4	462	14,0	3	3	3	297	9,5	
17. Physical education (including military training for boys).....	1	1	2	1	198	6,0	2	2	1	198	6,3	
18. Drawing.....	1	1	1	1	132	4,0	1	1	1	132	3,2	
19. Singing.....	1	1	1	1	132	4,0	1	1	1	132	1,7	
20. Through 24 (other subjects).....	24	24	25	27	3,300	100,0	31	32	32	3,135	100,0	
Total.....	24	24	25	27	3,300	100,0	31	32	32	3,119	100,0	

Sources and Notes: *Mednyashki-1947*, pp. 51, 64, 76. Whole numbers refer to instruction hours during each week throughout the school year. In the fractions the numerator denotes the number of instruction hours in a given subject during the weeks of the fall term; the denominator refers to the number of instruction hours during the weeks of the spring term. The academic year consists of 33 instruction weeks. Other subjects were introduced at later dates: see Table II-B-2, Table II-B-3 and Table II-B-4. The basic data for the curricular structure were reconstructed from the Soviet primary source cited; arrangement, grouping and computed distributions are those of the author.

TABLE II-B-2.—General curriculum of Soviet primary and secondary school as of 1952

Subjects of instruction	Primary (4-year) school							Primary—complete secondary (7-year) school							Primary—complete secondary (10-year) school									
	Elementary grades 1-4				Instruction hours per week in grades:			Intermediate grades 5-7				Instruction hours per week in grades:			Upper grades 8-10				Instruction hours per week in grades:					
	1	2	3	4	Hours	Per cent	5	6	7	Hours	Per cent	5	6	7	Hours	Per cent	8	9	10	Hours	Per cent	Total, grades 8-10	Hours	Per cent
<i>Group I: General (languages, literature, humanities and social sciences)</i>																								
1. Russian language and literature	15	14	15	8	1,716	52.0	10	8	6	792	25.3	2,508	39.0	16/16	18/18	15	1,617	50.0	5,214	53.9	2,508	54.5	5.6	
2. Other literature	15	14	15	8	1,716	52.0	10	8	6	792	25.3	2,508	39.0	16/16	18/18	15	1,617	50.0	5,214	53.9	16.8	54.5	5.6	
(1, 2) Total 1-2	15	14	15	8	1,716	52.0	10	8	6	792	25.3	2,508	39.0	16/16	18/18	15	1,617	50.0	5,214	53.9	16.8	54.5	5.6	
3. Foreign language (German, French, English)	15	14	15	3	99	3.0	4	3	363	11.6	363	5.6	4/3	3/4	4	396	12.2	3,053	31.5	363	11.2	7.5		
4. History	15	14	15	3	99	3.0	2	3/2	2	214	6.8	313	4.9	4/3	3/4	4	396	12.2	7,099	7.3	313	1.2	0.7	
5. Constitution of the U.S.S.R.	15	14	15	3	99	3.0	3	2/3	2/3	265	8.4	347	5.4	3	3/2	2	181	1.0	6,666	6.7	313	1.0	0.7	
6. Geography	15	14	15	3	99	3.0	3	2/3	2/3	265	8.4	347	5.4	3	3/2	2	181	1.0	6,666	6.7	313	1.0	0.7	
7. Psychology	15	14	15	3	99	3.0	3	2/3	2/3	265	8.4	347	5.4	3	3/2	2	181	1.0	6,666	6.7	313	1.0	0.7	
8. Logic	15	14	15	3	99	3.0	3	2/3	2/3	265	8.4	347	5.4	3	3/2	2	181	1.0	6,666	6.7	313	1.0	0.7	
<i>Group II: Scientific (mathematics and sciences)</i>	6	7	6	9/10	941	28.5	9	12	14/13	1,138	36.3	2,079	32.3	13	12	15/15	1,320	40.8	3,399	35.2	1,320	40.8	35.2	
9. Arithmetic	6	7	6	7	858	26.0	7	2	297	9.5	1,155	17.8	16/16	17/17	18/18	19/19	20/20	1,155	12.0	1,155	12.0	1,155	12.0	
10. Mathematics (algebra, geometry, trigonometry)	6	7	6	7	858	26.0	7	5	6	363	11.6	363	5.6	6	6	6	594	18.4	957	9.9	363	11.2	21.9	
(9, 10) Total 9-10	6	7	6	7	833	2.5	2	3	231	7.4	314	4.9	2	2	2	247	7.6	446	4.7	314	4.9	446	4.7	
11. General science (nature studies, introductory theory and biology)	15	14	15	2/3	83	2.5	2	3	2/3	82	2.6	165	5.2	3	2	2	4/5	3/3	33	1.0	33	0.3	33	0.3
12. Chemistry	15	14	15	2/3	83	2.5	2	3	2/3	82	2.6	165	5.2	3	2	2	4/5	3/3	33	1.0	33	0.3	33	0.3
13. Physics	15	14	15	2/3	83	2.5	2	3	2/3	82	2.6	165	5.2	3	2	2	4/5	3/3	33	1.0	33	0.3	33	0.3
14. Astronomy	15	14	15	2/3	83	2.5	2	3	2/3	82	2.6	165	5.2	3	2	2	4/5	3/3	33	1.0	33	0.3	33	0.3
<i>Group III: Applied (activity, skill and vocational arts)</i>	3	3	4	4	462	14.0	3	3	297	9.5	759	11.8	3	3	3	297	9.2	1,056	10.9	1,056	10.9	1,056	10.9	
15. Physical education (including military training for boys)	1	1	1	2	198	6.0	2	2	198	6.3	396	6.2	2	2	2	198	6.1	594	6.1	594	6.1	594	6.1	
16. Drawing	1	1	1	1	132	4.0	1	1	132	4.0	333	1.1	132	2.0	1	1	1	198	3.1	132	1.4	132	1.4	
17. Drafting	1	1	1	1	132	4.0	1	1	132	4.0	333	1.1	132	2.0	1	1	1	198	3.1	132	1.4	132	1.4	
18. Singing	1	1	1	1	132	4.0	1	1	132	4.0	333	1.1	132	2.0	1	1	1	198	3.1	132	1.4	132	1.4	
19. Through 24: (other subjects)	24	24	25	27	3,300	100.0	31	32	32	32	3,135	100.0	6,435	100.0	32	32	32	3,234	100.0	3,234	100.0	3,234	100.0	
Total	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24		

Sources and Notes: *Medvinskii-1952*, pp. 59, 74, 86. Whole numbers refer to instruction hours during each week throughout the school year. In the fractions the numerator refers to the number of instruction hours in a given subject during the weeks of the fall term; the denominator refers to the number of instruction hours during the weeks of the spring term. The academic year consists of 33 instruction weeks. Other subjects were introduced at later dates; see Table II-B-3 and Table II-B-4. The basic data for the curricular structure were reconstructed from the Soviet primary source cited; arrangement, grouping and computed distributions are those of the author. For description of the course contents of the individual subjects of instruction listed above, see *SEM*, pp. 275-77.

TABLE II-B-3.—General curriculum of Soviet primary and secondary school as of 1955

Subjects of instruction	Primary (4-year) school							Primary—complete secondary (7-year) school							Primary—complete secondary (10-year) school								
	Elementary grades 1-4				Instruction hours per week in grades:			Intermediate grades 5-7				Instruction hours per week in grades:			Upper grades 8-10				Instruction hours per week in grades:				
	1	2	3	4	Hours	Per cent	5	6	7	Hours	Per cent	5	6	7	Hours	Per cent	8	9	10	Hours	Per cent	Total, grades 8-10	Hours	Per cent
<i>Group I: General (languages, literature, humanities and social sciences)</i>																							
1. Russian language and literature	13	13	13	13	9	1,716	53.0	18	16	13	1,551	49.0	13	13	1,551	49.0	13	13	13	1,386	40.1	4,653	47.2
2. Other literature	13	13	13	13	9	1,584	49.0	18	16	13	1,551	49.0	13	13	1,551	49.0	13	13	13	1,386	40.1	4,653	47.2
(1, 2) Total 1-2	13	13	13	13	9	1,584	49.0	18	1														

SUPPLEMENT TO TABLE II-B-3

TEXTBOOKS FOR TEN-YEAR SCHOOLS IN U.S.S.R.¹

The following listing of textbooks was prepared by the U. S. Office of Education, Division of International Relations, which has copies of a large number of these texts. The author is indebted to W. K. Medlin for providing him with this list.

GRADE I

Russian Language and Literature:

Bukvar' (Primer). Compiled by a group of co-workers in RSFSR Acad. of Pedagog. Sciences. 6th ed.

VOSKRESENSKAIA, A. I. Bukvar' (Primer). 15th ed.

KOSTIN, N. A. Uchebnik russkogo iazyka. Grammatika, pravopisanie, razvitiye rechi (Textbook of Russian Language. Grammar, penmanship, speech development). For grade one. 5th ed.

SOLOV'EVA, E. E. and others. Rodnaia rech' (The Mother Tongue). Reader for grade one. 15th ed.

Arithmetic:

PCHELKO, A. S. and others. Arifmetika (Arithmetic). Textbook for grade one. 4th ed.

GRADE II

Russian Language and Literature:

KOSTIN, N. A. idem. For grade two. 6th ed., Uchpedgiz.
SOLOV'EVA, E. E. and others. idem. Reader for grade two. 15th ed.

Arithmetic:

PCHELKO, A. S. and others. idem. Textbook for grade two. 5th ed.

GRADE III

Russian Language and Literature:

ZAKOZHURNIKOVA, M. L. and ROZHDESTVENSKII, N. S. Uchebnik russkogo iazyka (Textbook for Russian Language). For grade three. 5th ed., Uchpedgiz.
SOLOV'EVA, E. E. and others. idem. Reader for grade three. 14th ed.

Arithmetic:

PCHELKO, A. S. and others. idem. Textbook for grade three. 4th ed.

GRADE IV

Russian Language and Literature:

ZAKOZHURNIKOVA, M. L. and ROZHDESTVENSKII, N. S. idem. For grade four. 4th ed.
SOLOV'EVA, E. E. and others. idem. Reader for grade four. 14th ed.

Arithmetic:

PCHELKO, A. S. and others. idem. Textbook for grade three. 4th ed.

Natural Science:

SKATKIN, M. N. Kniga dlja chteniia po estestvoznaniiu (Reader for natural science). For grade four. 4th ed.

Geography:

BLONSKAIA, N. I. and RAUSH, V. A. Kniga dlja chteniia po geografii (Reader for geography). For grade four. 4th ed.

History:

ALEKSEEV, S. P. and others. Iстория СССР (History of the U.S.S.R.). For grade four. 3d ed.

GRADE V

Russian Language and Literature:

BARKHUDAROV, S. G. and KRIUCHKOV, S. E. Uchebnik russkogo iazyka (Textbook of Russian) Part 1. *Fonetika i morfologija* (Phonetics and morphology). For grades 5-6. 5th ed.

GOLUBKOV, V. V. and others. Rodnaia literatura (Native literature). Reader for grade 5. 5th ed.

USHAKOV, D. N. and KRIUCHKOV, S. E. Orfograficheskii slovar' (Orthographic dictionary). For grades 5-10. 14th ed.

Arithmetic:

SHEVCHENKO, I. N. Arifmetika (Arithmetic). For grades 5-6. 3d ed.

PONOMAREV, S. A. and SYRNEV, N. I. Sbornik zadach i uprazhnenii po arifmetike (Manual of problems and exercises in arithmetic). For grades 5-6. 5th ed.

VSESVIATSKII, V. B. Botanika (Botany). For grades 5-6. 3d ed.

Geography:

ZASLAWSKII, I. I. and GERASIMOVA, T. P. Fizicheskaiia geografija (Physical geography). For grade 5. 4th ed.

History:

KOROVKIN, F. P. Iстория древнего мира (History of the ancient world). For grades 5-6. 4th ed.

Foreign languages:

TSVETKOVA, Z. M. and SHPIGEL, TS. G. Uchebnik angliiskogo iazyka (Textbook of English). For grade 5. 4th ed.

BAKHAREVA, M. A. and KALACHEVA, Z. V. Uchebnik frantsuzskogo iazyka (Textbook of French). For grade 5. 4th ed.

GRIGOR'EVA, V. M. and others. Uchebnik nemetskogo iazyka (Textbook of German). For grade 5. 4th ed.

Practical exercises:

KIVOTOV, S. A. Prakticheskie zaniatiia na shkol'nom uchebno-opytnom uchastke (Practical exercises in the school experimental gardens). Study aid for grades 5-6. 3d ed.

GRADE VI

Russian language and literature:

BARKHUDAROV, S. G. and KRIUCHKOV, S. E. Uchebnik russkogo iazyka (Textbook of Russian). Part 2. *Sintaksis* (Syntax). For grades 6-7. 5th ed.

BOCHAROV, G. K. Rodnaia literatura (Native literature). Reader for grade 6. 4th ed.

Mathematics:

BARSUKOV, A. N. Algebra (Algebra). Part 1. For grades 6-7. 3d ed.

NIKITIN, N. N. and FETISOVA, A. I. Geometriia (Geometry). Part I. For grades 6-9. 3d ed.

LARICHEV, P. A. Sbornik zadach i uprazhnenii po algebre (Manual of problems and exercises in algebra). For grades 6-7. 10th ed.

NIKITIN, N. N. Sbornik zadach po geometrii (Manual of problems in geometry). Part 1. For grades 6-7. 2d ed.

Physics:

PERYSHKIN, A. V. and others. Fizika (Physics). For grade 6. 10th ed.

Geography:

SCHASTNEV, P. N. and others. Fizicheskaiia geografija chastei sveta (Physical geography of parts of the world). For grade 6. 4th ed.

History:

KOSMINSKII, E. A. Iстория средних веков (History of the Middle Ages). For grades 6-7. 5th ed.

¹ List published in *Sovetskie knigi*, No. 147, 1957 (Moskva: Vsesoiuznoe ob'edinenie "Mezhdunarodnaiia Kniga", 1957), pp. 41-52. All textbooks are published by the State Publishing House for Textbooks (Uchpedgiz).

Foreign languages:

NELIDOV, I. A. *Uchebnik angliiskogo iazyka* (Textbook of English). For grade 6. 3d ed.
 PARCHEVSKII, K. K. and ROISENBLIT, E. B. *Uchebnik frantsuzskogo iazyka* (Textbook of French). For grade 6. 3d ed.
 KUDRIAVTSEVA, O. E., ZLATOGORSKAIA, R. L., and STRODT, L. M. *Uchebnik nemetskogo iazyka* (Textbook of German). For grade 6. 3d ed.

GRADE VII

Literature:

BOCHAROV, G. K. *Rodnaia literatura* (Native literature). Reader for grade 7. 4th ed.

Physics:

PERYSHKIN, A. V. and others. *Fizika* (Physics). Part 2. For grade 7. 10th ed.

Chemistry:

KIRIUSHKIN, D. M. *Khimiia* (Chemistry). For grade 7. 5th ed.

Geography:

STROEV, K. F. *Geografija SSSR* (Geography of the U.S.S.R.). For grade 7. 2d ed.

Mechanical drawing:

ABRIKOSOV, A. A. *Cherchenie* (Mechanical drawing). Part 1. For grade 7. 6th ed.

Zoology:

SHALAEV, V. F. and RYKOV, N. A. *Zoologija* (Zoology). For grade 7. 3d ed.

Foreign Languages:

BELOVA, E. V. and TODD, L. R. *Uchebnik angliiskogo iazyka* (Textbook of English). For grade 7. 10th ed.
 LIVSHITS, E. I. and RONSKAIA, L. N. *Uchebnik frantsuzskogo iazyka* (Textbook of French). For grade 7. 10th ed.

IVANOV, D. B. and others. *Uchebnik nemetskogo iazyka* (Textbook of German). For grade 7. 2d ed.

Practical exercises:

KIVOTOV, S. A. *Prakticheskie zaniatiia na uchebno-opytnom uchastke* (Practical exercises in the school experimental gardens). Study aid for grade 7. 2d ed.

GRADE VIII

Russian language and literature:

GREKOV, V. F. and others. *Posobie dlia zaniatiii po russkomu iazyku v starshikh klassakh (8-10 klassy)* (Aid for the study of Russian in the upper grades (Grades 8-10). 7th ed.

BRÓDSKII, N. L. and KUBIKOV, I. N. *Khrestomatiia po russkoi literature* (Reader in Russian literature). For grade 8. 21st ed.

FLORINSKII, S. M. *Russkaia literatura* (Russian literature). For grades 8-10. 5th ed.

Mathematics:

KISELEV, A. P. *Algebra* (Algebra). Part 2. For grades 8-10. 35th ed.

LARICHEV, P. A. *Sbornik zadaч i uprazhnenii po algebre* (Manual of problems and exercises in algebra). For grade 8. 9th ed.

BRADIS, V. M. *Chetyrekhznachnye matematicheskie tablitsy* (Four-place mathematical tables). For grades 8-10. 29th ed.

Physics:

PERYSHKIN, A. V. and others. *Kurs fiziki* (A course in physics). Part 1. For grade 8. 5th ed.

ZNAMENSKII, P. A. *Sbornik zadaч i uprazhnenii po fizike* (Manual of problems and exercises in physics). For grades 8-10. 10th ed.

Mechanical drawing:

ABRIKOSOV, A. A. *Cherchenie* (Mechanical drawing). Part 2. For grades 8-10. 4th ed.

Anatomy and physiology:

GARIB'IAN, R. B. and others. *Anatomia i fiziologija cheloveka* (Anatomy and physiology of man). For grade 8. 3d ed.

Chemistry:

KHODAKOV, IU. V., SHAPOVALENKO, S. I. and others. *Khimiia* (chemistry). For grades 8-10. 4th ed.

GOL'DFARB, IA. L. and SMORGONSKII, L. M. *Sbornik zadaч i uprazhnenii po khimiii* (Manual of problems and exercises in chemistry). For grades 8-10. 19th ed.

Geography:

MAMAEV, I. I. *Ekonomicheskaja geografija zarubezhnykh stran* (Economic geography of foreign countries). For grade 8. 3d ed.

EFIMOV, A. V. *Novaia istorija* (Modern History). Part 1. For grade 8. 17th ed.

BUSHCHIK, A. P. *Istoriia SSSR* (History of the U.S.S.R.). Part 1. For grade 8. 3d ed.

Foreign languages:

BELOVA, E. V. and TODD, L. R. *Uchebnik angliiskogo iazyka* (Textbook of English). For grade 8. 8th ed.

GRUZINSKAI, I. A. and CHERKASSKAI, E. B. *Grammatika angliiskogo iazyka dlia starshikh klassov* (English grammar for the upper grades). Grades 8-10. 18th ed.

BAKHAREVA, M. A. and others. *Uchebnik frantsuzskogo iazyka* (Textbook of French). For grade 8. 9th ed.

SYREISHCHIKOVA, A. A. *Kratkii grammaticheskii spravochnik frantsuzskogo iazyka* (Brief French grammar manual). For grades 8-10. 14th ed.

BERGMAN, N. A. and GIL'KNER, A. IU. *Uchebnik nemetskogo iazyka* (Textbook of German). For grade 8. 9th ed.

BERGMAN, N. A. and NATANZON, M. D. *Grammatika nemetskogo iazyka* (German grammar). For grades 8-10. 9th ed.

Practical exercises:

SHCHERBAKOV, M. I. and others. *Praktikum po osnovam rastenievodstva i sel'skokhoziaistvennogo mashinovedeniia* (Practical training in the fundamentals of plant culture and of the operation and maintenance of agricultural machinery). For grades 8-10 of rural schools. 2d ed.

LAPIN, M. M. *Osnovy rastenievodstva* (Fundamentals of plant culture). Textbook for grade 8 of rural schools. 2d ed.

ELENEV, A. V. and others. *Osnovy mekhanizatsii sel'skogo khoziaistva* (Fundamentals of the mechanization of agriculture). Study aid for grades 8-10. 3d ed.

BESPALKO, V. P. *Rukovodstvo po mashinovedeniu* (Handbook on the operation and maintenance of machinery). Part 1. Study aid for grade 8. 2d ed.

GRADE IX

Literature:

ZERCHANINOV, A. A. and others. *Russkaia literatura* (Russian literature). For grade 9. 17th ed.

CHERNYSHEVSKII, N. G. *Chto delat'?* (What is to be done?). ("Biblioteka shkol'nika"). Study aid for grade 9.

GONCHAROV, I. A. *Oblomov*. ("Biblioteka shkol'nika"). Study aid for grade 9.

OSTROVSKII, A. N. *Groza* (The storm). ("Biblioteka shkol'nika"). Study aid for grade 9.

CHEKHOV, A. P. *Vishnevyi sad* (The cherry orchard). *Rasskazy* (Short stories). ("Biblioteka shkol'nika"). Study aid for grade 9.

TOLSTOI, L. N. *Voina i mir* (War and peace). Vols. I and II. ("Biblioteka shkol'nika"). Study aid for grade 9.

TOLSTOI, L. N. *Voina i mir* (Idem.) Vols. III and IV. ("Biblioteka shkol'nika"). Study aid for grade 9.

Mathematics:

KISELEV, A. P. *Geometriia* (Geometry). Part 2. For grades 9-10. 20th ed.

RYBINK, N. A. *Sbornik zadach po geometrii* (Manual of problems in geometry). Part 2. For grades 9-10. 25th ed.

NOVOSELOV, S. I. *Trigonometriia* (Trigonometry). For grades 9-10. 3d ed.

STRATILATOV, P. V. *Sbornik zadach po trigonometrii* (Manual of problems in trigonometry). For grades 9-10. 2d ed.

Physics:

PERYSHKIN, A. V. and others. *Kurs fiziki* (A course in physics). Part 2. For grades 9-10. 5th ed.

Biology:

VESELOV, E. A. *Osnovy obshchei biologii* (Fundamentals of general biology). For grade 9. 2d ed.

Geography:

LIALIKOV, N. I. *Ekonomicheskaiia geografija SSSR* (Economic geography of the U.S.S.R.). For grade 9. 2d ed.

History:

GALKIN, I. S., KHVOSTOV, V. M. and others. *Novaia istoriia* (Modern history). Part 2. For grade 9. 13th ed.

Istoriia SSSR (History of the U.S.S.R.). Part 2. Under the editorship of PAMKRATOVA, A. M. For grade 9. 17th ed.

Foreign languages:

BELOVA, E. V. and TODD, L. R. *Uchebnik angliiskogo iazyka* (Textbook of English). For grade 9. 8th ed.

BAKHAREVA, M. A. and TSETLIN, N. T. *Uchebnik frantsuzskogo iazyka* (Textbook of French). For grade 9. 8th ed.

POLOGILOV, K. M. *Uchebnik nemetskogo iazyka* (Textbook of German). For grade 9. 8th ed.

Practical exercises:

ESAULOV, P. A. and others. *Osnovy zhivotnovodstva* (Fundamentals of animal husbandry). Study aid for grade 9 of rural schools. 3d ed.

STAVROVSKII, A. E. *Praktikum po osnovam zhivotnovodstva* (Practical training in the fundamentals of animal husbandry). Handbook for grade 9 of rural schools. 3d ed.

BESPALKO, V. P. *Rukovodstvo po mashinovedeniiu* (Hand-

book on the operation and maintenance of machinery). Part 2. *Automobil'* (The automobile). Study aid for grade 9. 2d ed.

SHANTYR', M. V. *Rukovodstvo po mashinovedeniiu* (Handbook on the operation and maintenance of machinery). (*Traktor*) (Tractor). Study aid for grade 9. 2d ed.

GRADE X

Literature:

DEMENT'EV, A. G. and others. *Russkaia sovetskaiia literatura* (Russian Soviet literature). For grade 10. 7th ed.

GOR'KII, M. V. I. *Lenin, Mat', Na dne, Starukha Izergil'* (V. I. Lenin, Mother, In the depths, Old woman Izergil'). ("Biblioteka shkol'nika").

MAIAKOVSKI, V. *Stikhi i poemy* (Verses and poems). 3d ed., ("Biblioteka shkol'nika").

OSTROVSKII, N. *Kak zakalialas' stal'* (How the steel was tempered). ("Biblioteka shkol'nika").

FADEEV, A. *Molodaia guardiia* (The young guard). ("Biblioteka shkol'nika").

SHOLOKHOV, M. *Podnialaia tselina* (The Virgin Soil Uprooted). Novel. Book I. 3d ed., ("Biblioteka shkol'nika"). *Literatura narodov SSSR* (Literature of the peoples of the U.S.S.R.). *Sbornik*. (An anthology). Compiled by KLIMOVICH, L. I. For grade 10. 5th ed.

Physics:

PERYSHKIN, A. V. and others. *Kurs fiziki* (A course in physics). Part 3. For grade 10. 5th ed.

Astronomy:

VORONTSOV-VEL'IAMINOV, B. A. *Astronomiia* (Astronomy). For grade 10. 5th ed.

History:

Istoriia SSSR (History of the U.S.S.R.). Part 3. Under the editorship of PANKRATOVA, M. A. For grade 10. 17th ed.

Foreign Languages:

NELDOVA, I. A. and TODD, L. R. *Uchebnik angliiskogo iazyka* (Textbook of English). For grade 10. 7th ed.

LOBANOVA, L. G. and others. *Uchebnik frantsuzskogo iazyka* (Textbook of French). For grade 10. 7th ed.

POGODILOV, K. M. and RAKHMANOV, I. V. *Uchebnik nemetskogo iazyka* (Textbook of German). For grade 10. 18th ed.

Practical exercises:

MEMRUK, A. F. *Praktikum po elektrotekhnike* (Practical training in electrical engineering). For grade 10. 2d ed.

Note: With the exception of textbooks for the new subjects introduced in the curriculum in 1955-57, these textbooks were used with the 1952, 1955 and 1957 curricula presented in this appendix.

TABLE II-B-4.—General curriculum of Soviet primary and secondary school as of 1957

Subjects of instruction	Primary—complete secondary (7-year) school										Primary—complete secondary (10-year) school											
	Primary (4-year) school					Elementary grades 1-4					Intermediate grades 5-7					Upper grades 8-10						
	Instruction hours per week in grades:				Total, grades 1-4	Instruction hours per week in grades:				Total, grades 5-7	Instruction hours per week in grades:				Total, grades 8-10	Instruction hours per week in grades:				Total, grades 1-10		
	1	2	3	4	Hours per week in grades:	5	6	7	Hours per week in grades:	8	9	10	Hours per week in grades:	11	12	13	14	15	Hours per week in grades:	Percent		
<i>Group I: General (languages, literatures, humanities and social science).....</i>	13	13	13	14	1,768	52.0	18	16	13	1,598	47.5	3,366	49.7	14/14	13/14	11/12	11/12	11/12	11/12	34.4		
1. Russian language and literature.....	13	13	13	9	1,632	48.0	18	16	13	1,598	47.5	3,366	49.7	14/14	13/14	11/12	11/12	11/12	11/12	34.4		
2. Other literature.....	13	13	13	9	1,632	48.0	9	8	6	782	23.2	2,444	35.7	5	4	4	4	4	4	4.692		
Total 1-2.....	13	13	13	9	1,632	48.0	9	8	6	782	23.2	2,444	35.7	5	4	4	4	4	4	44.2		
3. Foreign language (German, French, English).....	2	2	2	2	68	2.0	2	2	2	374	11.1	374	5.5	3	3	3	3	3	3	28.56		
4. History.....	2	2	2	2	68	2.0	2	2	2	204	6.1	272	4.0	4/3	3/4	4/3	4/3	4/3	4/3	26.9		
5. Constitution of the U.S.S.R.	2	2	2	2	68	2.0	3	2	2	238	7.1	306	4.5	2/3	4	2/3	4	2/3	4	6.5		
6. Geography.....	2	2	2	2	68	2.0	3	2	2	238	7.1	306	4.5	2/3	4	2/3	4	2/3	4	6.2		
7. Psychology.....	2	2	2	2	68	2.0	3	2	2	238	7.1	306	4.5	2/3	4	2/3	4	2/3	4	4.6		
8. Logic.....	2	2	2	2	68	2.0	3	2	2	238	7.1	306	4.5	2/3	4	2/3	4	2/3	4	4.6		
6	6	6	8	884	26.0	8	11	3	1,088	32.3	1,972	29.2	13	13/12	12	14/13	13/12	14/13	13/12	35.4		
6	6	6	6	816	24.0	8	11	3	1,088	32.3	1,972	29.2	13	13/12	12	14/13	13/12	14/13	13/12	33.4		
6	6	6	6	816	24.0	6	6	6	612	18.2	1,428	21.2	6	6	6	6	6	6	6	33.4		
Total 9-10.....	6	6	6	6	816	24.0	6	6	6	612	18.2	1,428	21.2	6	6	6	6	6	6	6	33.4	
<i>Group II: Scientific (mathematics and sciences)</i>	9. Arithmetic.....	2	2	2	2	2	2	2	2	204	6.1	476	7.1	3	3	3	3	3	3	3	3.332	
10. Mathematics (algebra, geometry, trigonometry).....	2	2	2	2	2	2	2	2	2	68	2.0	204	5.5	1	1	1	1	1	1	1	3.332	
Total 9-10.....	6	6	6	6	816	24.0	6	6	6	612	18.2	1,428	21.2	6	6	6	6	6	6	6	33.4	
11. General science (nature studies, introductory chemistry and biology).....	2	2	2	2	68	2.0	2	3	2	238	7.1	306	4.5	2	1	1	1	1	1	1	19.2	
12. Chemistry.....	2	2	2	2	68	2.0	2	3	2	238	7.1	306	4.5	2	1	1	1	1	1	1	19.2	
13. Physics.....	2	2	2	2	68	2.0	2	3	2	238	7.1	306	4.5	2	1	1	1	1	1	1	19.2	
14. Astronomy.....	2	2	2	2	68	2.0	2	3	2	238	7.1	306	4.5	2	1	1	1	1	1	1	19.2	
<i>Group III: Applied (activity, skill and vocational arts).....</i>	5	5	6	6	748	22.0	6	6	6	680	20.2	1,428	21.1	7	8	8	8	8	8	8	24.4	
15. Physical education (including military training for boys).....	2	2	2	2	272	8.0	2	1	1	204	6.1	476	7.1	3	3	3	3	3	3	3	7.5	
16. Drawing.....	1	1	1	1	136	4.0	1	1	1	136	4.0	136	3.0	0.5	1	1	1	1	1	1	1	1.3
17. Drafting.....	1	1	1	1	136	4.0	1	1	1	136	4.0	136	3.0	0.5	1	1	1	1	1	1	1	1.3
18. Singing.....	1	1	1	1	204	6.0	2	2	2	204	6.1	408	6.0	0.0	0	0	0	0	0	0	0	1.9
19. Manual labor and school work shop.....	1	1	1	1	204	6.0	2	2	2	204	6.1	408	6.0	0.0	0	0	0	0	0	0	0	1.9
20. Obligatory excursions to enterprises, practical experience in industrial or agricultural production.....	1	1	1	1	204	6.0	2	2	2	204	6.1	408	6.0	0.0	0	0	0	0	0	0	0	1.9
21. Fall and spring field work and industrial work after school.....	1	1	1	1	204	6.0	2	2	2	204	6.1	408	6.0	0.0	0	0	0	0	0	0	0	1.9
22. Fundamentals of production (course).....	1	1	1	1	204	6.0	2	2	2	204	6.1	408	6.0	0.0	0	0	0	0	0	0	0	1.9
23. Practical work (summer employment after the end of the school year).....	1	1	1	1	204	6.0	2	2	2	204	6.1	408	6.0	0.0	0	0	0	0	0	0	0	1.9
Total.....	24	24	25	25	3,400	100.0	32	32	32	3,366	100.0	6,766	100.0	34	34	34	34	34	34	34	100.0	
25. Supplemental optional vocational electives.....	24	24	25	25	3,400	100.0	32	32	32	3,366	100.0	6,766	100.0	34	34	34	34	34	34	34	100.0	
Grand total.....	24	24	25	25	3,400	100.0	32	32	32	3,366	100.0	6,766	100.0	34	34	34	34	34	34	34	100.0	

a, b, c, d—see discussion in notes below.

TABLE II-D-5.—*Distribution of intermediate (5-7) and upper (8-10) grade teachers by subject matter and education in 1958-59*

Subject matter of teacher	Grades 5-7						Grades 8-10						Total	
	Total (thous- ands)	Per- cent	By education in percent				Total (thous- ands)	Per- cent	By education in percent				Thous- ands	Per- cent
			HE ¹	TI ²	Other	HE ¹			TI ²	Other				
Language and literature.....	259.0	43.2	101.0	33.5	360.0	40.0	
Russian language and literature, total.....	145.0	24.2	52.0	17.3	197.0	21.8	
In schools with Russian language of instruction.....	98.0	16.4	37.7	56.2	6.1	34.0	11.3	90.0	9.5	0.5	132.0	14.6		
In schools with non-Russian language of instruction.....	47.0	7.8	27.6	52.8	19.6	18.0	6.0	81.1	15.6	3.1	65.0	7.2		
Native (non-Russian) language and literature.....	61.0	10.1	35.0	55.3	9.7	20.0	6.6	86.2	12.5	1.3	81.0	9.1		
English.....	16.0	2.7	72.7	18.4	8.9	10.0	3.3	91.4	7.3	1.3	26.0	2.9		
German.....	33.0	5.5	31.0	30.7	38.3	16.0	5.3	72.6	18.3	9.1	49.0	5.4		
French.....	4.0	0.7	86.0	22.0	10.0	3.0	1.0	89.8	8.5	1.7	7.0	0.8		
History.....	68.0	11.4	42.1	50.6	7.3	45.0	15.0	89.8	9.7	0.5	113.0	12.6		
Geography.....	39.0	6.6	52.8	38.5	8.7	18.0	6.0	87.9	11.2	0.9	57.0	6.3		
Geography and natural sciences combined ^a	29.0	4.8	17.2	70.4	12.4	4.0	1.3	64.1	33.1	2.8	33.0	3.7		
Sciences and mathematics.....	204.0	34.0	133.0	44.2	337.0	37.4	
Natural sciences ^a	45.0	7.5	36.5	50.7	12.8	15.0	5.0	81.8	16.5	1.7	60.0	6.7		
Chemistry.....	11.0	1.8	48.0	42.2	9.8	26.0	8.6	92.1	7.3	0.6	37.0	4.1		
Physics (only).....	16.0	2.7	41.7	45.2	13.1	30.0	10.0	87.8	11.2	1.0	46.0	5.1		
Physics and math combined.....	54.0	9.0	16.7	69.2	14.1	16.0	5.3	72.9	25.4	1.7	70.0	7.8		
Mathematics (only).....	78.0	13.0	28.5	56.5	15.0	46.0	15.3	85.3	13.8	0.9	124.0	13.7		
Total.....	599.0	100.0	301.0	100.0	900.0	100.0	

^a General science includes "nature studies" (*estestvoznanie*), botany, zoology, biology, human anatomy.

² Teacher institute education.

Source: *Nar Khoz-1959*, p. 819.

¹ Higher education.

TABLE II-F-1.—Number of Soviet primary and secondary schools, by type of school, 1914, 1922-59
(All figures in thousands)

Year end	Grand total, primary and secondary schools	"Regular" total	Elementary schools with grades 1-4 only	7-year with grades 1-7 only	10-year with grades 1-10	Other
	A	B	C	D	E	
1914 ^a	123.7	123.7	119.4	2.0	2.3	.....
1914 ^b	105.5	105.5	101.9	1.6	2.0	0.0
1922.....	88.6	82.6	3.5	2.5	(*)	
1923.....	91.8	85.7	4.0	2.0	0.1	
1924.....	93.6	87.6	4.0	1.8	0.2	
1925.....	103.3	96.4	4.8	1.6	0.4	
1926.....	111.0	102.7	5.7	1.7	0.9	
1927.....	120.1	118.6	108.8	6.6	1.8	1.4
1928.....		124.8	114.4	7.1	1.9	1.5
1929.....		133.2	121.7	7.8	1.9	1.8
1930.....		152.8	136.0	12.4	0.6	3.8
1931.....		168.1	139.2	21.8	(*)	7.1
1932.....		166.3	136.2	26.7	1.3	2.1
1933.....		166.5	133.9	28.6	2.4	1.5
1934.....		163.1	127.9	30.0	4.1	1.1
1935.....		164.1	125.7	31.5	6.0	0.9
1936.....		164.8	122.6	33.0	8.1	1.1
1937.....		168.4	122.1	34.2	9.9	2.2
1938.....		171.6	121.7	36.3	12.5	1.1
1939.....		172.8	116.7	39.2	15.8	1.0
1940.....	198.8	191.5	125.9	45.7	18.8	1.1
1945.....		186.8	131.6	41.7	12.8	0.7
1946.....		193.2	136.9	42.9	12.9	0.5
1947.....		197.2	139.7	44.1	12.9	0.5
1948.....		199.3	139.1	46.7	13.0	0.5
1949.....		201.0	132.1	54.9	13.6	0.5
1950.....	222.1	201.6	126.4	59.6	15.0	0.6
1951.....		200.2	120.6	61.5	17.4	0.7
1952.....		198.3	115.8	62.0	19.7	0.7
1953.....	213.0	197.0	112.1	61.8	22.3	0.8
1954.....		197.7	111.1	60.4	25.2	0.9
1955.....		195.3	108.8	58.7	26.9	0.9
1956.....		196.6	110.3	57.1	28.3	0.9
1957.....	214.2	198.5	111.9	55.9	29.8	0.9
1958.....	215.2	199.7	112.4	55.7	30.7	0.9
1959.....	220.5	199.3	111.5	56.6	30.2	1.0

^a Contemporary boundaries of the U.S.S.R. including post-war annexations.

^b U.S.S.R. boundaries prior to September 1939.

^c Negligible.

SOURCES AND NOTES TO TABLE II-F-1

Designation of columns is as follows

- A.—All types of primary and secondary schools, including those for adults, working and rural youth.
- B.—Total number of schools of "regular" type, including those for the physically handicapped and retarded children.
- C.—Elementary schools with Grades 1-4 only.
- D.—Intermediate 7-year schools with grades 1-7.
- E.—Complete primary-secondary schools with grades 1-10.
- F.—Schools for physically handicapped children.

Sources

- Col. A, 1914, 1940-50, 1953, 1957, 1958.—*NarKhoz*—1959, pp. 90, 808-9.
- Col. B, C, D, E, F, 1922-38.—*Kul't Stroi*—1940, p. 27.
- Col. B, C, D, E, F, 1939-40, 1945-55.—*KS*—1956, p. 80.
- Col. B, C, D, E, F, 1914a, b; 1922-27, 1932, 1937, 1940-50, 1953, 1955-58.—*NarKhoz*—1959, pp. 812-13.
- Col. A, B, 1959.—*SSSR-Tsif*—1959, p. 206.
- Col. A-F, 1959.—*NarKhoz*—1960, pp. 727, 729.

or a certificate stating the subjects studied in the higher military institution.

XX. All problems in connection with admission to higher educational establishments are handled by a committee on admissions which operates in accordance with the rules of admission and its decisions are final.

XXI. Persons admitted as students to higher educational establishments but who fail to enroll without valid reason within 10 days after the beginning of the academic year are dismissed from the higher educational establishment.

TABLE IV-A-O.—*Distribution by previous preparation of entrants into Soviet higher educational establishments in the fall of a given year*

Previous Preparation of entrants	(A) 1926	(B) 1927	(C) 1933	(D) 1934	(E) 1935	(F) 1938	(G) 1945
Graduates from secondary school.....	52.0	39.2	13.3	14.6	16.5	458.8	80.0
Rabfak preparatory (workers' faculty).....	26.8	25.2	43.5	40.0	38.4	22.9	None
Technicians.....	17.7	9.8	17.7	16.5	13.4	12.9	5.0
Other (courses, self-preparatory, other VUZ).....	3.5	b25.8	25.5	28.9	31.7	5.4	15.0
Total.....	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^a Includes graduates of 2d-level schools (*shkoly vtoroi stupeni*) and 9-year schools (*deviatiletki*).

^b Includes 6.3 percent of FZO graduates, 8 percent military-school graduates, and 11.5 percent "other" self-preparatory.

^c In engineering fields, 20.8 percent were regular secondary-school graduates.

^d In engineering fields, 71.2 percent were regular secondary-school graduates.

SOURCES AND NOTES

Columns (A), (G).—Bartosek, *Vysoké*, p. 26. Until 1934 the majority of secondary school graduates had a 9-year primary and secondary education.

Column (B).—BSE (1st ed.), 1929, vol. 14, col. 33.

Columns (C), (D), (E).—*Kul't Stroi*—1935, p. 93; also Bartosek, *Vysoké*, p. 28.

Column (F).—*Kul't Stroi*—1940, p. 127; *Kul't Stroi*—1935, p. 93; also Bartosek, *Vysoké*, p. 28.

TABLE IV-A-1-S.—*Aggregate acceptances, enrollment in and graduations from Soviet higher educational establishments by type of program of study in selected years, 1914–59*
[Figures rounded in thousands]

	1914	1927	1932	1940	1950	1953	1955	1956	1957	1958	1959
ACCEPTANCES											
Total.....	42.8	245.8	263.4	349.1	430.8	461.4	458.7	438.3	455.9	511.7	
Regular day.....	{ 42.8	{ 245.8	154.9	228.4	265.1	257.2	231.2	219.7	215.5	227.1	
Evening.....			6.6	9.1	16.6	28.4	32.6	34.7	42.2	63.5	
Extension.....	(^a)	(^a)	101.9	111.6	149.1	175.8	194.9	183.9	198.2	221.1	
ENROLLMENT											
Total.....	127.0	169.0	504.0	812.0	1,247.0	1,562.0	1,867.0	2,001.0	2,099.0	179.0	2,267.0
Regular Day....	127.0	{ 169.0	{ 504.0	558.0	818.0	995.0	1,147.0	1,177.0	1,193.0	180.0	1,146.0
Evening.....	(^a)	(^a)		27.0	27.0	48.0	81.0	101.0	127.0	153.0	196.0
Extension.....	(^a)	(^a)		227.0	402.0	519.0	639.0	723.0	779.0	846.0	925.0
GRADUATIONS											
Total.....	28.7	43.2	126.1	176.9	220.2	245.8	259.9	266.5	290.7	338.0	
Regular Day....	{ 28.7	{ 43.2	97.8	145.9	168.7	179.2	185.3	186.8	205.2	240.5	
Evening.....			4.4	2.0	3.3	4.6	5.7	7.2	8.7	13.2	
Extension.....	(^a)	(^a)	23.9	29.0	48.2	62.0	68.9	72.5	76.8	84.3	

^a None

Sources and Notes: *NarKhoz*—1959, pp. 830, 835, 837; *NarKhoz*—1960, pp. 740, 745, 748. Prior to 1938 extension-correspondence

students were not counted as students but as attendants of training courses. Until 1958 the reporting of "regular" students meant aggregate students in day and evening divisions ("stationalnye").

TABLE IV-A-5.—Relative proportion of women among regular full-time students in Soviet higher educational establishments, 1926-37, 1940, 1950, 1955-59

	x	a	b	c	d	e	f	g	h	i	j	k	l	Average, 1927-37	m	n	o	p	q	r	s
1. Engineering-Industrial	7.2	13.4	14.3	15.6	15.5	*17.7	19.8	22.4	23.3	25.6	26.6	28.0	20.2	40.3	30.3	35.4	36.0	33.0	32.0	31.0	
2. Agricultural	16.3	17.4	18.4	20.4	25.4	*28.1	30.6	32.1	31.8	30.2	29.3	30.2	26.7	46.1	39.3	39.3	39.0	34.0	33.0	31.0	
3. Socioeconomic	16.5	21.1	22.4	19.4	24.8	*29.8	34.9	36.0	40.1	39.7	41.3	41.3	31.7	63.6	57.0	67.0	67.0	66.0	65.0	63.0	
4. Education	48.0	48.7	*49.0	*46.7	44.4	*46.9	49.3	50.2	48.4	46.8	47.4	48.2	47.8	66.5	71.9	72.1	69.0	69.0	65.0	62.0	
5. Health	52.0	*54.0	*56.0	58.0	*64.7	71.4	75.1	71.2	69.0	68.8	67.5	64.9	64.9	69.2	69.0	69.0	69.0	69.0	69.0	69.0	
6. All fields	30.9	28.5	29.1	29.2	28.3	*30.8	33.3	36.5	38.0	39.5	41.0	43.1	34.3	54.3	52.3	51.0	51.0	49.0	47.0	45.0	

*Figures obtained by interpolation.

Table Code, Sources and Discussion

1-6, a,d,f,g.—Beilin, Kadry, p. 367; also Sots Stroi—1935, p. 617; SC-Eng—1936, p. 457; Sots Stroi—1934, p. 410.

1-6h.—SC-Eng—1936, p. 457; also Sots Stroi—1936, p. 576.

1-6k.—Sots Stroi—1933-38, p. 124.

1-6a,g,h,i,j,k.—Kul't Stroi—1940, p. 113.

1-3, 6b,c.—Plan Kadrov—1930, p. 127.

4c.—By averaging 5a and 5d.

5c.—By averaging 6a and 6d.

4, 5b.—By averaging, and by 2 percentage points upward adjustment in order to reflect the general upward trend.

1-6e.—Derived by averaging (d) and (f) for each field. Some justification for this procedure is implied in the statement in *Itogi Persofo FYP*, p. 175, which reveals that in 1932 the relative proportion of women in the industrial branch "increased up to 18 percent" (thus 1e is 18 percent as against 17.7 derived by interpolation in the table).

1-6x.—Plan Kadrov—1930, p. 127.

1-6, m,n,o.—NKh—1937, p. 253; *Vestnik statistiki*, 1956, No. 6, p. 96; KS—1956, p. 205. The first two sources state the absolute number of women students in the respective years on the basis of which the percentages were recomputed and incorporated in this table. This was done also as a check, for all these sources

SOURCES AND NOTES

Table Code

Sources and Discussion
1-6p.—DOS—1957, p. 282. The source does not state explicitly that the reported percent of women students refers to regular enrollment only. The data for 1940 and 1950 can be compared with that reported in other sources, which reveal that the percentages stated should refer to women among regular students only.

1-6q.—SSSR-Tsif—1958, p. 360.

1-6r.—Narkhoz—1939, p. 840.

1-6s.—Narkhoz—1960, p. 751.

It must be noted in general that the averaging procedure in (b) and (c) columns does not lead to any appreciable error. However, in 1932, when the enrollment rose tremendously, it is conceivable that the share of women also greatly increased. So far the only justification of the method employed was found in *Itogi Persofo FYP*, p. 173. The suppression of 1932 statistics in all publications of later years is extremely conspicuous.

Column 1: "Average 1928-38" represents an unweighted average and is derived by averaging yearly percentages of relative share of women for the period in question.

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Column 1: "Average 1928-38" represents an unweighted average and is derived by averaging yearly percentages of relative share of women for the period in question.

TABLE IV-A-6.—Composition by social origin of students in Soviet higher educational establishments, 1927-38

[In percent at the beginning of a given year]

	(a) 1927	(b) 1928	(c) 1929	(d) 1930	(e) 1931	(f) 1932	(g) 1933	(h) 1934	(i) 1935	(j) 1938	Average, 1927-38	Averag- ing error	1937-38 adjusted average	
1. Industrial:														
Worker....	40.0	38.3	46.4	60.0	61.9	.....	64.6	62.2	59.8	43.5	52.9	.....	53.0
Peasant....	14.6	12.8	.....	.....	11.3	.....	7.8	7.1	.....	9.6	10.5	.....	10.4
Other....	47.1	40.8	.....	.....	26.8	.....	27.2	30.7	.....	53.1	36.7	+0.1	36.6
2. Agricultural:														
Worker....	18.2	23.0	.....	.....	33.0	.....	37.1	36.4	37.1	30.5	30.8	.....	30.8
Peasant....	44.4	35.0	.....	.....	34.8	.....	34.4	29.3	.....	36.7	35.7	.....	35.7
Other....	37.4	42.0	.....	.....	32.2	.....	28.5	34.3	.....	32.8	34.5	+1.0	33.5
3. Socioeconomic														
Worker....	34.2	38.0	.....	.....	41.6	.....	46.0	46.5	44.1	39.2	41.4	.....	41.4
Peasant....	23.1	.....	.....	.....	22.7	.....	19.2	15.8	.....	24.9	21.1	.....	21.1
Other....	43.7	.....	.....	.....	35.7	.....	34.8	37.7	.....	35.9	37.6	+0.1	37.5
4. Education														
Worker....	16.3	.....	.....	.....	28.8	.....	29.8	28.1	26.9	23.9	25.6	.....	25.6
Peasant....	27.8	.....	.....	.....	24.1	.....	24.9	20.3	.....	30.3	25.5	.....	25.5
Other....	55.9	.....	.....	.....	47.1	.....	45.3	51.6	.....	45.8	49.1	+0.2	48.9
5. Health														
Worker....	17.0	.....	.....	.....	35.0	.....	40.9	38.5	37.1	33.6	33.7	.....	33.7
Peasant....	14.8	.....	.....	.....	19.9	.....	21.3	18.6	.....	17.6	18.4	.....	18.4
Other....	66.2	.....	.....	.....	45.1	.....	37.8	42.9	.....	48.8	48.1	+0.2	47.9
6. All fields:														
Worker....	24.2	25.4	30.3	35.2	46.4	58.0	50.3	47.9	45.0	33.9	39.7	.....	39.7
Peasant....	23.3	23.9	22.4	20.9	19.3	14.1	16.9	14.6	16.2	21.6	19.3	.....	19.3
Other....	52.5	50.7	47.3	43.9	34.3	27.9	32.8	37.5	38.8	44.5	41.0	0.0	41.0	

Worker: Workers and their children.

Peasant: Peasants and their children.

Other: Intelligentsia, white-collar workers, proprietors and their children.

NOTES AND SOURCES

Place in Table Sources and Discussion

2 (wp) c.—Plan Kadrov—1930, p. 125.

3 (w) c.—Plan Kadrov—1930, p. 126.

6 (wp) a, b, c, d.—Narkhoz—1932, p. 535.

1927-38 average.—1927-38 average is derived from available data for individual years. This procedure of averaging resulted in an error because of incomplete reporting and some lack of precision in official reporting of this type of data. 1927-38 adjusted average was obtained essentially for statistical purposes in carrying out estimates presented elsewhere in this volume so that the distribution would total 100 percent. Adjustment was made to benefit worker and peasant categories. Thus, when each row was averaged separately, the three categories combined totaled to more than 100 percent in the 1927-38 unadjusted average. The averaging error was then subtracted from "other" category to obtain adjusted average for 1927-38.

TABLE IV-A-7.—*Composition of regular students by nationality in Soviet higher educational establishments, 1927, 1929-35, 1950, 1956-59*
 [In percent of total regular (full-time) enrollment in all fields]

Nationality	a	b	c	d	e	f	g	h	i	j	k	l	m
	U.S.S.R. national composition (1926 census)	1927	1929	1930	1933	1934	1935	1929- 35 aver- age	1950	1956	1957	1958	1959
1. Russians.....	52.9	56.1	56.1	53.2	53.5	56.0	54.4	54.6	60.8	62.1	62.2	61.9	62.3
2. Ukrainians.....	21.2	14.6	14.6	17.8	16.1	15.5	14.3	15.7	12.7	13.9	13.8	13.8	13.3
3. Belarusians.....	3.2	2.9	2.9	2.6	3.3	2.7	3.0	2.9	2.0	2.7	2.7	2.7	2.5
4. Kazakhs.....	2.7	0.2	0.2	0.3	0.5	0.3	0.4	0.3	1.2	1.2	2.0	2.2	2.4
5. Uzbeks.....	2.7	0.3	0.3	0.4	0.7	0.9	0.5	0.6	1.5	1.9	1.3	1.5	1.6
6. Georgians.....	1.2	2.4	2.4	4.3	2.9	2.7	3.5	3.2	2.6	1.8	1.7	1.7	1.7
7. Azerbaijdzhans (Turks).....	1.2	1.1	1.1	1.4	1.4	1.5	1.3	1.3	1.6	1.4	1.3	1.4	1.3
8. Armenians.....	1.1	2.0	2.0	2.4	2.3	2.0	2.3	2.2	2.2	1.7	1.1	1.2	1.2
9. Moldavs.....		0.1	.....	.....	.....	.....	.....	.....	0.2	0.4	0.4	0.4	0.5
10. Latvians.....	(^a)	(^a)	.....	.....	.....	.....	.....	.....	0.9	0.7	0.7	0.7	0.7
11. Lithuanians.....	(^a)	(^a)	.....	.....	.....	.....	.....	.....	1.0	1.1	0.4	0.4	0.5
12. Tadzhiks.....	0.7	0.06	0.05	0.1	0.1	0.1	0.1	0.1	0.3	0.4	0.5	0.5	0.5
13. Kirgiz.....	0.5	0.06	.....	.....	.....	.....	0.1	.....	0.4	0.4	1.7	1.6	1.5
14. Turkomen.....	0.5	0.06	0.05	0.1	0.1	0.1	0.1	0.1	0.3	0.4	0.4	0.4	0.4
15. Estonians.....	(^a)	.....	.....	.....	.....	.....	.....	.....	0.8	0.6	0.6	0.6	0.6
Accounted total.....	87.9	79.9	79.7	82.6	80.9	81.8	80.0	81.0	88.5	90.7	90.9	91.0	91.0
Other nationalities, total.....	12.1	20.1	20.3	17.4	19.1	18.2	20.0	19.0	11.5	9.3	9.1	9.0	9.0
of which:													
Jews.....	1.8	.....	13.5	11.3	12.8	12.2	13.3	12.4	.....	.....	.....	.....	.....
Tatars.....	2.0	.....	0.8	0.9	1.3	1.4	1.3	1.3	.....	.....	.....	.....	.....
Germans.....	0.8	.....	0.5	0.6	0.7	0.5	0.7	0.6	.....	.....	.....	.....	.....
Chuvashes.....	0.8	.....	0.5	0.4	9.4	0.5	0.5	0.4	.....	.....	.....	.....	.....
Bashkirs.....	0.5	.....	0.1	0.1	0.2	0.2	0.2	0.2	.....	.....	.....	.....	.....
Poles.....	0.5	.....	0.6	0.8	0.8	0.8	0.7	0.8	.....	.....	.....	.....	.....
Mordvins.....	0.9	.....	0.2	0.2	0.2	0.3	0.3	0.2	.....	.....	.....	.....	.....
All others.....	4.8	.....	4.1	3.1	2.7	2.3	3.0	3.1	.....	.....	.....	.....	.....
Regular enrollment (thous.).....	168	204	288	458	527	563	.....	845	1,278	1,320	1,333	1,342	

SOURCES AND NOTES

Column in Table
c,e,g.—*Sots Stroi-1936*, p. 576 (data as of Jan. 1)

a,c,d,f.—*Sots Stroi-1934*, p. 411. Column a also in Lorimer,
The Population of the Soviet Union, pp. 55-61.

c,e,f.—*Sots Stroi-1935*, p. 617. This source actually reveals that
(c) is as of Jan. 1, 1933, while (f) is of Nov. 1, 1933. Thus
(f) actually represents year-entry 1934 figure. Same data
presented in *SC-Eng-1936*, p. 457.

h.—Unweighted average for the 1929-35 period.

b,i,j.—*Dos-1957*, p. 283. Percentage distribution was computed
by the author on the basis of the absolute figures reported
in this source. The definition of nationality contains the
wording "po korennym natsional'nostiam soiuznykh res-
publik" (by root nationality of the union republics). The
numbers 1-15 in the table indeed refer to the nationalities
of each of the fifteen union republics which comprised the
U.S.S.R., as of 1957.

k,l—*SSSR-Tsif-1958*, p. 361; *NarKhoz-1959*, p. 841. See Sup-
plement to Table IV-A-7.

m.—*NarKhoz-1960*, p. 752.

Definition of nationality in Table IV-A-7, col. a, c-h,
refers to the concept of root nationality. This concept was
reported abolished in the mid-1930's. From that time until
1957 Soviet sources refrained from publishing statistics of
this type and statistics on the geographic distribution of

enrollment displaced them. Geographic distribution, however,
does not reveal which nationality the students actually are,
since national minorities might attend institutions located
in other localities outside the territorial boundaries of a given
union republic. Also some Russians or other nationalities
might attend institutions located in the territory of other
national republics.

It is known from statistical reporting forms, however, that
the nationality of students continued to be reported to central
statistical organs. The concept of "root nationality" may
have changed and the "declared" (in student identification
papers—passport) nationality was being used instead. To the
great surprise of Western observers, in 1957 Soviet authorities
decided to release tabulations of regular student enrollment
by nationality, but they referred only to the nationalities
which were called the "root nationalities of the union re-
publics." An extensive check with a number of statistical
handbooks for localities, regions and republics revealed that
the figures thus reported definitely refer to national, rather
than geographic criteria. Apparently the unaccounted resid-
ual refers, therefore, to all other nationalities of the Soviet
Union (besides those for which the fifteen union republics
are named).

n—None or negligible (not part of U.S.S.R. in pre-World
War II boundaries.)

SUPPLEMENT TO TABLE IV-A-7.—*National composition of students enrolled in Soviet higher educational establishments, selected years, 1927-59*
 [In thousands and percent]

Nationality	1927		1950		1956		1956, RSFSR ^b		1957		1958		1959	
	Thousands	Percent	Thousands	Percent	Thousands	Percent	Thousands	Percent	Thousands	Percent	Thousands	Percent	Thousands	Percent
Russians.....	94.5	56.1	514.1	60.8	792.1	62.1	1054.7	83.3	823.2	62.2	824.9	61.9	835.3	62.3
Ukrainians.....	24.6	14.8	107.2	12.7	176.6	13.9	57.8	4.5	182.1	13.8	183.6	13.8	179.6	13.3
Belorussians.....	4.9	2.9	17.2	2.0	34.5	2.7	12.2	1.0	35.1	2.7	35.4	2.7	33.8	2.5
Uzbeks.....	0.5	0.3	12.5	1.5	24.7	1.9	1.3	0.1	26.3	2.0	28.9	2.2	30.5	2.4
Kazakhs.....	0.3	0.2	9.9	1.2	16.0	1.2	2.2	0.2	17.5	1.3	19.7	1.5	22.0	1.6
Georgians.....	4.0	2.4	21.8	2.6	22.9	1.8	2.9	0.2	22.2	1.7	23.1	1.7	23.7	1.7
Azerbaidzhans.....	1.9	1.1	13.4	1.6	17.4	1.4	1.1	0.1	16.6	1.3	18.3	1.4	17.7	1.3
Lithuanians.....	.....	.....	8.6	1.0	14.2	1.1	2.0	0.2	15.1	1.1	15.5	1.2	15.8	1.2
Moldavs.....	0.2	0.1	1.6	0.2	5.5	0.4	0.8	0.1	5.9	0.4	6.0	0.4	6.6	0.5
Latvians.....	.....	.....	8.1	0.9	9.1	0.7	2.6	0.2	9.4	0.7	9.6	0.7	9.8	0.7
Kirgiz.....	0.1	0.06	3.1	0.4	5.2	0.4	0.7	0.06	5.4	0.4	5.8	0.4	6.5	0.5
Tadzhiks.....	0.1	0.06	2.3	0.3	5.8	0.4	0.4	0.03	6.4	0.5	6.7	0.5	6.8	0.5
Armenians.....	3.4	2.0	18.7	2.2	22.1	1.7	7.3	0.6	22.0	1.7	21.2	1.6	20.4	1.5
Turkomen.....	0.1	0.06	2.3	0.3	5.3	0.4	0.3	0.01	5.4	0.4	5.7	0.4	5.7	0.4
Estonians.....	.....	.....	7.0	0.8	7.7	0.6	1.4	0.1	7.5	0.6	7.4	0.6	7.5	0.6
Subtotal.....	134.6	79.9	747.8	88.5	1159.1	90.7	1147.7	90.7	1200.1	90.9	1211.8	91.0	1221.7	91.0
Other nationalities.....	33.9	20.1	97.3	11.5	118.8	9.3	119.0 ^a	9.3 ^a	120.2	9.1	121.2	9.0	119.9	9.0
Official total of regular (day and evening) students.....	168.5	100.0	845.1	100.0	1279.9	100.0	na	na	1320.3	100.0	1333.0	100.0	1341.6	100.0
Total enrollment.....	168.5	.....	1247.4	.....	2001.0	.....	1266.7	100.0	2099.1	.....	2178.9	.....	2267.0	.....

Sources and Notes: *Dos-1957*, p. 283; *NarKhoz-1959*, p. 841; *KS-RSFSR-1958*, p. 381; *NarKhoz-1960*, p. 752.

Thousand Percent

119.0 9.3

* "Other" Total 1956:

Jews.....	51.6	4.1
Karelio-Finns.....	1.2	0.1
Tatars.....	22.4	1.8
Bashkirs.....	4.2	0.3
Dagestan nationalities.....	4.4	0.3
Buriats.....	3.0	0.2
Kabardins.....	1.6	0.1

	Thousand	Percent
Komi.....	2.1	0.2
Mari.....	1.6	0.1
Mordvins.....	3.0	0.2
Ossets.....	3.5	0.2
Udmurs.....	2.8	0.3
Chuvash.....	6.2	0.5
Yakuts.....	2.1	0.2
All other (unspecified).....	9.3	0.7

^b Note that distribution of students in RSFSR is for total enrollment, while for the U.S.S.R. (all years) it is for regular students only.

APPENDIX IV-B-1.—*Specialties (Spetsial'nosti) Offered in Soviet Higher Educational Establishments as of 1959*

Introductory Note

In order to curtail fragmentary specialization and to introduce some orderly procedure for offering the existing and for introducing new specialties, the Ministry of Higher Education in the fall of 1954 decreed the establishment of definitions and descriptions of specialties. This appendix presents a listing of these specialties. They are arranged by branch and specialty groups. It was decreed in 1954 that thereafter new specialties could be offered by individual higher education institutions only after the approval of the Ministry of Higher Education. The number of specialties (*spetsializatsii*) within specialties (*spetsial'nosti*) was reduced, but

their definitions were not spelled out by the decree. Apparently, as in the past, specializations are decided upon by individual higher education institutes upon the requests of employers of professional graduates.

The listing of the specialties below was compiled first from *VyShkoSPR-1957*, pp. 55-60, and then verified from other sources (particularly *Sprav VUZ-1958* and *Sprav VUZ-1959*). The original listing of specialties was established in accordance with the decree of the Minister of Higher Education of the U.S.S.R. as of September 9, 1954. Subsequent amendments were made as of February 15, April 18, May 13 and 31, August 15, 1955; and

GENERAL NOTE TO APPENDIX TABLES
IV-C-1, IV-C-2 AND IV-C-3

Appendix Tables IV-C-1, IV-C-2 and IV-C-3 present data on the number of Soviet higher educational establishments as compiled from different Soviet sources. The aggregate number of Soviet higher educational establishments (Table IV-C-1) officially reported in Soviet statistical handbooks is a mystery, for we can never exhaust the grand total by summing up the various distributions of institutions of higher learning by field or specialty group (see definitions in text). Apparently the *total* independent number of higher educational establishments reported includes, in addition to regular (day) institutions, extension-correspondence institutes and independent evening *branches* of higher educational establishments. But even when the number of all these establishments is included, the sum still does not exhaust the officially reported total. One can only speculate about the institutions contained in the residual figure. What is worse, in one year (1947) the number of institutions identifiable by branch from the Soviet directory of higher educational establishments (*Sprav VUZ-1947*) exceeds the official reported total by 15 units.

Until 1947 the Soviet Government did not publish directories of its higher educational establishments. Until then Soviet higher educational establishments, grouped by branch and specialty field, had to be compiled from various sources. These compilations are summarized in Table IV-C-2. The totals (Cols. TR and GT in Table IV-C-2) derived from the sub-groups invariably diverge from the Soviet official total reported in Table IV-C-1. Omissions, or double-counting in the case of branch divisions, as well as the opening and consolidation of individual establishments, make the task of matching the two compilations seem like looking for the proverbial needle in the haystack.

Since 1947 Soviet authorities have published regularly institutional directories (*Sprav VUZ . . .*), which identify each institution by location, street address, and list divisions and specialties offered therein. The 1959 directory was used as the basis for compiling Appendix IV-B-3, where Soviet data on divisions and specialties have been rearranged, recoded (in decimal code of the specialties and roman numeral -letter code for divisions) and checked (for 1959 and the two preceding years) for specialty offerings. The Soviet institutional directories for 1947, 1954, 1955, 1958 and 1959 have all been processed in order to arrive at the tabulation of data in Appendix Table IV-C-3. Table IV-C-3 thus presents a compilation of Soviet higher educational establishments by branch and specialty group on the basis of *individual* and *fully identifiable* units. The compilation in Table IV-C-3, in the opinion of this researcher, is the most reliable (we are absolutely sure what goes into the total and each sub-grouping) guide to the number and distribution of Soviet higher education institutions by branch and specialty group compiled so far. In each year listings include all the regular (day) higher educational establishments and all *independent* extension-correspondence institutes. The independent evening branches of regular higher educational establishments, plus the evening and extension-correspondence divisions of regular (day) institutions, are *not* included.

Finally, although on occasion speculation was made (because of the frequently encountered discrepancies) that Soviet official totals might include some higher educational establishments of the military establishment and of the Communist Party, this could not be verified. The compilation in Table IV-C-3 certainly excludes military academies (though military training "special divisions" of regular higher educational establishments and the enigmatic "Mechanical Institute" are automatically counted) and also excludes higher educational establishments of the Communist Party. The persistent search for institutions which are counted, and where, is exceedingly important, for it has direct relevance to Soviet reporting of enrollments and graduations by branch and specialty group, a reporting which is often based on institutional grouping. The implication of the institutional data in Table IV-C-3 is thus such that the reporting of professional graduates by Soviet higher educational establishments in all probability *excludes* persons trained in the military and party schools offering higher education certification.

TABLE IV-C-1.—Official reporting of the total number of Soviet higher educational establishments, 1914, 1920-59

Year end	Number of institutions	Year end	Number of institutions
1914(a).....	105	1940.....	817
1914(b).....	91	1941.....	.....
		1942.....	.....
1922.....	248	1943.....	.....
1923.....	187	1944.....	.....
1924.....	169	1945.....	789
1925.....	145	1946.....	805
1926.....	148	1947.....	807
1927.....	148	1948.....	823
1928.....	152	1949.....	864
1929.....	190	1950.....	880
1930.....	579	1951.....	887
1931.....	701	1952.....	827
1932.....	832	1953.....	818
1933.....	714	1954.....	798
1934.....	688	1955.....	765
1935.....	718	1956.....	767
1936.....	700	1957.....	763
1937.....	683	1958.....	766
1938.....	708	1959.....	753
1939.....	750		

1914(a) refers to present boundaries; 1914(b) to pre-1939 boundaries.

Sources and notes: *KS-1956*, pp. 202-03; *Dos-1957*, p. 278; *SSSR-Tsif-1958*, p. 356; *Eliutin-VSSS-1959*, p. 22; *Narkhoz-1960*, p. 740. Additional information about the number of institutions by branch of specialization may be found in Table C-1 of the initial study *SPM*, pp. 334-35. It must be noted that in general, the sums of the breakdowns and counts of *identified* institutions invariably total to a number smaller than the officially reported grand total.

TABLE IV-C-2.—Number of Soviet higher educational establishments, by field, for selected years, 1913-49

Year end	Engineering			Agriculture		Socioeconomic		Educational				Health				Extension and Party			
	(a) ET	(b) EIC	(c) ETC	(d) A	(e) SE	(f) TED	(g) U	(h) TCO	(i) AR	(j) TH	(k) M	(l) PC	(m) TR	(n) ACP	(o) IEX	(p) EXB	(q) GT		
1913.....	19	.....	.....	15	10	[45]	9	30	6	6	6	N	95	N	N	N	N
1919.....	27	.....	.....	14	6	.....	37	54	17	9	9	N	*166	N	N	N	N
1926.....	23	.....	.....	30	8	[65]	22	30	13	10	10	N	136	.....	.....	.....	.....
1927.....	25	.....	.....	30	6	[59]	20	27	12	.....	9	.....	129	.....	.....	.....	.....
1928.....	26	.....	.....	31	7	[54]	19	23	12	.....	11	.....	129	.....	.....	.....	.....
1929.....	32	.....	.....	38	11	[60]	20	27	13	.....	11	.....	152	.....	.....	.....	.....
1930.....	248	.....	.....	96	50	[105]	N	91	14	38	38	.....	537	.....	.....	.....	.....
1931.....	[241]	199	42	125	(27)	154	19	.....	.....	45	.....	.....	[592]	53	.....	645	.....	
1935.....	[150]	127	23	92	(23)	194	.....	.....	.....	55	.....	.....	[514]	99	.....	613	.....	
1938.....	[165]	135	30	87	44	286	.....	.....	22	77	.....	.....	659	49	.....	708	.....	
1939.....	[165]	137	28	85	47	375	22	(329)	24	78	.....	.....	750	.....	.....	.....	.....
1946.....	169	.....	.....	88	36	[406]	31	320	55	89	74	15	[788]	.....	16	372	[808]
1949.....	166	.....	.....	90	32	[462]	32	379	51	86	72	14	836	.....	16	410	853

[] By addition.

() Derived figure.

* Does not total.

N None.

Capital letters designate grouping of institutes by field

TH—Total health.

M—Medical only.

PC—Physical culture only.

TR—Total regular higher educational establishments (ET, A, SE, TED, TH).

ACP—Industrial academies and Higher Communist Party schools.

IEX—Independent extension training higher educational establishments.

EXB—Extension training divisions attached to regular higher educational establishments.

GT—TR plus IEX.

SOURCES AND NOTES TO TABLE IV-C-2

Place in Table Sources and Notes

1913 a, d, e, g-k, m.—*Medynskii—1952*, p. 169.1919 a, d, e, g-k, m.—*Statisticheskii ezhegodnik, 1918-20*, vol. 2, pp. 112-113, as quoted by Gorokhoff, *Materials*, pp. 35a-35d. Note that m does not total—2 institutions short.1926, a, d-k, m.—*Pedagogicheskaiia Entsiklopediia, 1930*, vol. 3, col. 263, as quoted in Gorokhoff, *Materials*, pp. 35a-35d.1927 a, d, e, g-i, k.—*Podgotovka*, pp. 64-65, as quoted by Gorokhoff, *Materials*, pp. 35a-35d.1928-30 a, d-i, k, m.—*NarKhoz—1932*, p. 513. Socioeconomic segment (1930e) is biased upward by inclusion of Kom VUZ and industrial academies.1931 b-d, f, j, n, q.—*Sots Stroi—1936*, p. 573.1931 e.—*Sots Stroi—1936*, p. 573. Since the number of Kom VUZ is given (53 institutions), socioeconomic segment institutions are derived as a residual (645 minus 53 minus sum of a, d, f, j).1935 b-d, f, j, n.—*Sots Stroi—1936*, p. 573. n. includes 17 Kom VUZ, 20 industrial academies, and 62 VKSKhSh.1935 q.—*Kul't Stroi—1940*, p. 101. The total (596 institutions) includes 17 Kom VUZ and some other than regular higher educational establishments. If double counting in *Sots Stroi—1936*, p. 573, is eliminated (i.e., VKSKhSh subtracted from total and industrial academies and Kom VUZ added), it gives about the same total as in the table—614 institutions.

1935 e.—Derived as a residual.

1938 b-f, i, j, m, n.—*Sots Stroi—1933-38*, p. 121.1939 b-g, i, j, m.—*BSE-SSSR—1948*, col. 1233. *Kul't Stroi—1940*, p. 256.1946 a, d, e, g-l.—*Medynskii—1948*, p. 73.1946 m.—By addition. *VVSh*, No. 7, 1947, p. 2, reports the total as 792, which differs from the derived total by four institutions.1946 o, p.—*VVSh*, No. 6, 1947, p. 84.1949, a, d, e, g-m, o-q.—*Medynskii—1952*, p. 167; and *BSE—2d*, vol. 9, p. 515.

TABLE IV-C-3.—*Soviet higher educational establishments, by type, branch and specialty group as of 1947, 1954, 1955, 1958, and 1959*

Type of institution by branch and specialty group	1947	1954	1955	1958
I. Engineering-industrial.....	179	177	174	188
1. Polytechnical and industrial (multidivisional institutes for engineering training in a variety of fields).....	21	24	25	29
2. Electrical and power engineering, electronics and technical (engineering) physics.....	4	8	8	8
3. Machinebuilding engineering..... of which:	32	30	29	32
a. General machinebuilding (mechanical and automotive).....	18	16	16	19
b. Naval engineering (shipbuilding).....	2	2	2	2
c. Aeronautical engineering.....	7	7	7	7
d. Printing machinery and precision mechanics.....	3	3	3	3
e. Motion picture industry and cinema engineering.....	2	2	1	1
4. Geology, mining, and metallurgy..... of which:	21	26	26	27
a. Geology, mining (all types except ores), coal mining, and petroleum engineering.....	10	15	15	15
b. Mining (ores) and metallurgy.....	11	11	11	12
5. Chemical engineering and chemical technology.....	11	9	9	10
6. Fish and food industry..... of which:	12	13	13	13
a. Food industry technology, machinery, and maintenance engineering.....	9	9	9	9
b. Fish industry technology, fleet operations and maintenance engineering.....	4	4	4	4
7. Light industry..... of which:	9	8	8	8
a. Textile industry engineering and technology.....	6	5	5	5
b. Other branches of light industry.....	3	3	3	3
8. Civil engineering, construction engineering and geodesy..... of which:	32	27	27	29
a. Civil engineering and other construction engineering (except roads).....	19	17	} 19	20
b. Technology of construction materials and testing engineering.....	6	3		2
c. Geodesy.....	2	2		2
d. Road building and related surface structures engineering.....	5	5		7
9. Meteorology and hydrology.....	2	2	2	2
10. Transportation and communications (maintenance, operation and construction engineering)..... of which:	25	30	27	30
a. Railroad.....	12	15	13	14
b. River transport.....	2	4	4	4
c. Sea transport.....	5	5	4	4
d. Air transport (civilian only).....	1	1	1	1
e. Communications.....	5	5	5	7
II. Agricultural.....	100	109	108	109
11. Agriculture.....	56	61	63	67
12. Veterinary medicine, zootechny, animal breeding, and related studies.....	20	23	21	19
13. Mechanization and electrification of agriculture (partly engineering).....	8	7	7	7
14. Soil conservation, water conservation and irrigation.....	5	6	6	5
15. Forestry and timber industry (latter is engineering).....	11	12	11	11
III. Socioeconomic.....	40	35	31	30
16. Economic planning and managerial economics.....	9	9	8	7
17. Finance.....	9	9	9	9
18. Trade and distribution.....	8	5	5	7
19. Industrial and engineering economics.....	3	3	3	3
20. Jurisprudence.....	11	9	6	4

TABLE IV-C-3.—Continued

Type of institution by branch and specialty group		1947	1954	1955	1958	1959
IV. Education, including universities, arts and cultural services.....		414	382	361	297	296
21. Universities.....		31	33	33	39	40
22. Pedagogical institutes.....		120	187	206	195	193
23. Teachers institutes.....		197	91	52	1	1
24. Institutes of foreign languages (and Moscow Institute of Far Eastern Affairs).....		8	20	19	12	10
25. Institutes for librarians and archival specialists.....		3	5	5	3	5
26. Arts..... of which: a. Architecture.....		55	46	46	47	47
b. Graphic and sculptural arts.....		3	3	3	3	3
c. Conservatories.....		13	9	9	9	9
d. Theatrical (stage and movie actors, producers, effects, etc.).....		22	21	21	22	22
27. Theatrical (stage and movie actors, producers, effects, etc.).....		17	13	13	13	13
V. Health and physical education.....		89	88	88	94	95
27. Medicine.....		57	63	65	70	72
28. Stomatology.....		8	4	2	2	2
29. Pharmaceutical.....		9	8	8	7	6
30. Physical culture (teachers, coaches, and professional sportsmen).....		15	13	13	15	15
Total (accounted for).....		822	791	762	718	719

Sources and notes: The information in this table was compiled from: *Sprav VUZ-1947*; *Sprav VUZ-1954*; *Sprav VUZ-1955*; *Sprav VUZ-1958*; *Sprav VUZ-1959, passim*. The years refer to the respective academic years; i.e., 1947 refers to the academic year 1947-48. The actual count of institutions is made on the basis of listings of the Ministry of Higher Education, which it prepares in January of a given calendar year for the next academic year.

Among the institutions listed in this table there are included: 1947-15; 1954-23; 1955-22; 1958-22 *independent* (as contrasted with extension-correspondence divisions of regular higher educational institutions) extension-correspondence institutes. These institutes, being multi-branch establishments, operated in 1958 an estimated number of some 70 local (i.e., in different cities) branches. In addition, institutions *not included* in this list of professional training establishments are military academies (probably 18), commissioned officers' military schools (number unknown), police commissioned officers' schools and probably an academy (number unknown), industrial academies (prob-

ably 7) and 2 Communist Party higher educational establishments (1 Academy of Social Sciences and a Higher Party School, which probably has about 20 local branches).

It is to be noted furthermore that because there is a continuing process of consolidation and branching off among Soviet establishments of higher learning, the exact number of individual institutions cannot be ascertained precisely at any given time. And in this connection it is to be emphasized that the appearance or disappearance of individual establishments does not necessarily mean any change in the availability of physical facilities.

In 1959, among the total institutions listed, 21 were independent extension-correspondence institutions and 2 were independent branch extension-correspondence divisions of regular higher educational establishments located elsewhere (Kazan' Institute of Chemical Technology—branch in Kemerovo; and Moscow Petroleum Institute—branch in Al'met'evka).

SOURCES AND NOTES

Place in table	Sources and discussion
1927b.— <i>Sinetskii, PP Kadry</i> , p. 61.	
1929a, b.— <i>Ibid.</i> , pp. 66, 104; also <i>NarKhoz-1932</i> , p. 540.	
1931a.— <i>Sinetskii, PP Kadry</i> , p. 79.	
1940a.— <i>Ibid.</i> , p. 98.	
1931, 1940, 1942, 1944, 1946b.— <i>Ibid.</i> , p. 104.	
1946a, b, c, d.— <i>Ibid.</i> , p. 105; <i>VVSh</i> , No. 11, 1947, p. 30.	
1940c, d.— <i>VVSh</i> , Nos. 5-6, 1946, p. 2.	
1946a, b, c, d.— <i>Ibid.</i> , p. 105; <i>VVSh</i> , No. 11, 1947, p. 30.	
1950a.— <i>Ibid.</i> , No. 4, 1951, p. 11, states that professorial staffs, including <i>sovremestiteli</i> , increased between 1940 and 1950 by 45 percent. Assuming 60,000 for 1940, we have 87,000 for 1950 (year end).	
1950b.— <i>Bol'shevik</i> , No. 20, 1950, p. 24; <i>KS-1956</i> , p. 248, reports this figure as 86,500.	
1954b.— <i>VVSh</i> , No. 3, 1955, p. 3.	
1955a, c, d.— <i>KS-1956</i> , p. 249.	
1947, 1950, 1953-59a.— <i>KS-1956</i> , p. 248; <i>NKh-1956</i> , p. 233; <i>Dos-1957</i> , p. 284; <i>NKh-1957</i> , pp. 257-58; <i>SSSR-Tsif-1958</i> , p. 363; <i>NarKhoz-1959</i> , p. 843; <i>NarKhoz-1960</i> , p. 754.	
NOTE.—For the years 1947, 1950, 1953-59, see also Appendix Table V-B-2.	

TABLE IV-D-1.—Teaching staffs in Soviet higher education, 1927-59

Year end	Staff and plurality	Staff only	Among senior Staff	
			Professors	Associate professors
	(a)	(b)	(c)	(d)
1927.....	.....	16,454	.....	.....
1929.....	22,876	13,758	.....	.....
1931.....	58,220	26,200	.....	.....
1940.....	60,000	50,890	5,361	13,123
1943.....	.....	24,749	.....	.....
1944.....	51,904	42,072	4,669	10,125
1946.....	74,341	67,280	5,370	13,386
1947.....	81,500	.....	.....	.....
1950.....	87,000	80,000	.....	.....
1953.....	105,400	.....	.....	.....
1954.....	114,200	86,000	.....	.....
1955.....	119,059	.....	6,129	25,080
1956.....	125,000	.....	.....	.....
1957.....	132,300	.....	.....	.....
1958.....	135,700	.....	.....	.....
1959.....	137,800	.....	.....	.....

TABLE V-A-1.—Enrollment, acceptances and completion

[Enrollment figures in thousands]

		1929	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
I. Enrollment (year end):													
1. All institutions: higher education and research establishments	T	3.0	12.7	.....	14.8	13.0	10.6	9.8	9.0	8.3	12.2	.....	16.9
	R	3.0	12.7	.....	14.8	13.0	10.6	9.8	9.0	8.3	12.2	.....	14.4
	E	(^a)	(^a)	.....	(^a)	(^{a})	(^{a})	(^{a})	(^{a})	(^{a})	(^{a})	.....	2.5
2. Higher education	T	2.0	10.3	7.4	8.4	7.0	6.3	6.4	6.1	5.8	9.2	.....	13.2
	R	2.0	10.3	.....	8.4	7.0	6.3	6.4	6.1	5.8	9.2	.....	11.5
	E	(^a)	(^a)	.....	(^a)	(^{a})	(^{a})	(^{a})	(^{a})	(^{a})	(^{a})	.....	1.7
3. Research establishments	T	1.0	2.4	.....	6.4	6.0	4.3	3.4	2.9	2.5	3.0	.....	3.7
	R	1.0	2.4	.....	6.4	6.0	4.3	3.4	2.9	2.5	3.0	.....	2.9
	E	(^a)	(^a)	.....	(^a)	(^{a})	(^{a})	(^{a})	(^{a})	(^{a})	(^{a})	.....	0.8
II. Acceptances (calendar year):													
4. All institutions: higher education and research establishments	T	.....	.....	.....	3,712	.....	.....	.....	.....	.....	.....	3,530	
	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,782	
	E	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	748	
5. Higher education	T	.....	.....	.....	2,098	.....	.....	.....	.....	.....	.....	2,768	
	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,223	
	E	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	545	
6. Research establishments	T	.....	.....	.....	1,614	.....	.....	.....	.....	.....	.....	762	
	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	559	
	E	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	203	
III. Completion (calendar year):													
7. All institutions: higher education and research establishments	T	.....	.....	.....	2,350	2,169	.....	.....	.....	.....	.....	1,978	
	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,865	
	E	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	113	
8. Higher education	T	.....	.....	.....	974	.....	.....	.....	.....	.....	.....	1,472	
	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,411	
	E	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	61	
9. Research establishments	T	.....	.....	.....	1,376	.....	.....	.....	.....	.....	.....	506	
	R	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	454	
	E	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	52	

^a None.

SOURCES AND NOTES TO TABLE V-A-1

Enrollment is reported at the end of the calendar year. Acceptances and completion of aspirantura training refer to those during the course of the calendar year.

NOTE.—Aspirantura training, which was established in 1925, accounted in 1926 for about 800 advanced students (Sinetskii, *PP Kadry*, p. 58).

T—Total.

R—Regular.

E—Extension-correspondence.

2,3T and 2-3RE (29,32-38).—*Kul't Stroi*—1940, p. 242. There was a negligible number of extension program aspirantura students. Consequently R is assumed to be the same as T.

4-9T (33).—*Kul't Stroi*—1934, p. 66.7T (34).—*Kul't Stroi*—1935, pp. 96-97.

1-3T (29, 30, 32-38, 40, 45-55).—*KS*—1956, p. 255. It should be noted that this source reports aspirantura enrollment "as of the beginning" of the calendar year. Consequently, all figures were shifted accordingly to represent year-end

of aspirantura (advanced degree) training, 1929-59

acceptance and completion figures in units]

1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959
12.0	.....	.....	9.8	14.7	15.8	17.3	19.4	21.9	24.8	26.7	29.1	30.8	29.4	25.5	22.2	23.1	28.6
.....	.....	.....	8.7	.....	.....	.....	.....	18.1	.....	.....	.....	.....	21.4	17.8	14.7	15.5	18.6
.....	.....	.....	1.1	.....	.....	.....	.....	3.8	.....	.....	.....	.....	8.0	7.7	7.5	7.5	10.0
.....	2.8	3.7	6.9	9.6	9.6	10.0	10.7	12.5	14.6	15.7	17.2	18.0	16.8	14.1	12.1	12.3	15.6	
.....	.....	.....	6.1	.....	.....	.....	.....	11.2	.....	.....	.....	.....	13.2	10.6	8.8	9.0	10.8
.....	.....	.....	0.8	.....	.....	.....	.....	1.3	.....	.....	.....	.....	3.6	3.5	3.3	3.3	4.8
.....	.....	.....	2.9	5.1	6.2	7.3	8.7	9.4	10.2	11.0	11.9	12.8	12.6	11.4	10.2	10.8	13.0
.....	.....	.....	2.6	.....	.....	.....	.....	6.9	.....	.....	.....	.....	8.2	7.2	6.0	6.5	7.9
.....	.....	.....	0.3	.....	.....	.....	.....	2.5	.....	.....	.....	.....	4.4	4.2	4.2	4.3	5.1
.....	.....	.....	.....	.....	.....	.....	.....	7,717	.....	.....	.....	.....	7,367	5,732	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	6,377	.....	.....	.....	.....	5,384	4,123	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	1,340	.....	.....	.....	.....	1,983	1,609	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	4,783	.....	.....	.....	.....	4,193	3,231	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	4,253	.....	.....	.....	.....	3,225	2,464	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	530	.....	.....	.....	.....	968	767	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	2,934	.....	.....	.....	.....	3,174	2,501	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	2,124	.....	.....	.....	.....	2,159	1,659	.....	.....	.....
.....	.....	.....	.....	.....	.....	.....	.....	810	.....	.....	.....	.....	1,015	842	.....	.....	.....
.....	1,366	1,616	2,730	3,328	4,582	4,093	4,895	5,682	6,495	6,796	7,607	8,453	8,250	6,802	5,603	.....	.....
.....	1,221	1,443	2,531	3,057	4,174	3,649	4,524	5,115	5,843	5,997	6,536	7,213	6,811	5,272	4,089	.....	.....
.....	145	173	199	271	354	444	371	567	652	799	1,071	1,240	1,439	1,630	1,514	.....	.....
.....	1,200	1,164	2,045	2,232	2,918	2,461	2,977	3,412	4,009	4,349	4,752	5,301	4,941	3,826	3,330	.....	.....
.....	1,092	1,080	1,910	2,086	2,730	2,281	2,880	3,216	3,769	4,000	4,263	4,805	4,288	3,119	2,585	.....	.....
.....	108	84	135	146	188	180	97	196	240	349	489	496	653	707	745	.....	.....
.....	166	452	685	1,096	1,610	1,632	1,918	2,270	2,486	2,447	2,855	3,152	3,309	2,976	2,273	.....	.....
.....	129	363	621	971	1,444	1,368	1,644	1,899	2,074	1,997	2,273	2,408	2,523	2,053	1,504	.....	.....
.....	37	89	64	125	166	264	274	371	412	450	582	744	786	923	769	.....	.....

entries. For 1940, 1945, 1950, figures check with those reported in *Dos-1957*, p. 287, as of the "end of the year."

2T (31, 43, 44).—Sinetskii, *PP Kadry*, p. 177 (Chart 14). This source reports also figures for 1932-38, 1940, 1945-46 the same as those in the table.

1-3T (40).—*Dos-1957*, p. 287; *NKh-1957*, p. 260; and also Sinetskii, *PP Kadry*, p. 177; *VVSh*, No. 10, 1946, p. 48.

1-3T (45, 50, 56).—*Dos-1957*, p. 287; *NKh-1957*, p. 260.

1-3R (40, 45, 50, 55).—*KS-1956*, p. 255.

1-3E (40, 45, 50, 55).—Derived as a difference.

4-6TRE (40, 50, 55, 56).—*NKh-1957*, p. 260.

1T (41).—*BSE-SSSR*, col. 1241.

7-9TRE (40, 45, 50, 56).—*Dos-1957*, p. 287; *NKh-1957*, p. 260.

7-9TRE (40, 45-55).—*KS-1956*, p. 258. For 1940, 1945, 1950, the data are identical with those presented in *Dos-1957*, p. 287 and *NKh-1957*, p. 260.

1-3T, 7-9TRE (55-58).—*NarKhoz-1959*, p. 848.

1-3, 7-9TRE (56-59).—*NarKhoz-1960*, p. 760.

SOURCES AND NOTES

Place in Table Source and Discussion
A, B, C, D, F.—Galkin, *Nau Kadry*, p. 155.
E, G.—Computed from *F*.

H.—*KS-1956*, p. 250. The figures incorporated into the table in column *H* are those stated by the source. *KS-1956* reports, however, groupings of doctor degree holders by field of knowledge slightly different from those reported in columns *A-D* and *F*. This difference in grouping is particularly pronounced in the physical sciences, where the engineering science component for degrees awarded has been redistributed in such a way as to supplement the physical-mathematical and chemistry fields. The actual examination of the types of doctorates by field (*Vyshko-1948*, pp. 342-95) which are classified under "engineering sciences" reveals that indeed a number of fields could be easily reclassified under chemistry, physics or mathematics. This apparently happened in the *KS-1956* compilation. It turns out (as should be expected) that in the physical sciences, as well as in other fields, the plus and minus for figures referring to individual fields balance out in the totals. Because of this reclassification it is necessary to adjust some figures in column *H* to the base reporting in column *F*. This adjustment is shown in parenthesis and was derived as follows.

Footnote a.—It was assumed that the reclassification took place among all fields in the physical sciences, and in order to adjust column *H* to the reporting base of column *F* the following computations were made:

Rows	Given Number	F	—		J	H 1955 Totals Adjusted to F-base
			Derived distribution in percent	Actual losses, re-distributed		
IV. Physical Sciences,						
Total	4,122	100.0	-336	3,786		
1. Engineering sciences	2,360	57.2	-192	2,168		
2. Physical-mathematical	640	15.5	-52	588		
3. Chemistry	596	14.5	-49	547		
4. Geology-mineralogy	526	12.8	-43	483		

Adjusted *H* derived by subtracting *J* from *F*.

Footnote b.—Similarly, it was assumed (on the basis of an examination of the types of doctor degrees) that the most likely components of reclassification are history-philosophy (combined), pedagogy, art and art history and geography. The adjusted figures in column *H* were derived as follows:

Rows	Given Number	F Derived distribution in percent	J Actual losses, re-distributed	M 1955 Totals Adjusted to F-base
III. Humanities and social sciences, art and education,				
total	1,391	100.0	-194	1,197
11 and 12. History-philosophy	392	28.4	-55	337
13. Pedagogy	116	8.4	-16	100
15. Art and art history	77	5.5	-11	66
17. Geography (All other fields in group III which remain unaffected)	133 (673)	9.6 (48.9)	-17 (95)	116 (578)

I.—Distribution derived from column *H*.

J.—Losses are derived as a difference by subtracting *H* from *F*. For a discussion of redistribution of losses, see footnotes *a* and *b* above.

K.—Derived rate of losses during the 19-year period in percent of *J* to *F*.

Footnote c.—Refers to fine arts, painting, sculpture, music, the theater, cinema and related fields.

Footnote d.—Refers to physical culture and, mainly, to military sciences.

TABLE V-B-1.—Number of research, academic and advanced degree personnel
in Soviet higher educational and research establishments, 1914-60
[in thousands]

Year end	Grand total: Regular and plurality			Higher educational establishments			Research establishments			Other organizations		
	T	Reg.	Pl.	T	Reg.	Pl.	T	Reg.	Pl.	T	Reg.	Pl.
	A	B	C	D	E	F	G	H	I	J	K	L
1914.....	10.2	10.2	(ⁿ)	6.0	6.0	(ⁿ)	4.2	4.2	(ⁿ)	(ⁿ)	(ⁿ)	(ⁿ)
1924.....			(ⁿ)	17.7	17.7	(ⁿ)			(ⁿ)	(ⁿ)	(ⁿ)	(ⁿ)
1925.....			(ⁿ)			(ⁿ)			(ⁿ)	(ⁿ)	(ⁿ)	(ⁿ)
1926.....			(ⁿ)			(ⁿ)			(ⁿ)	(ⁿ)	(ⁿ)	(ⁿ)
1927.....			(ⁿ)	16.4	16.4	(ⁿ)			(ⁿ)	(ⁿ)	(ⁿ)	(ⁿ)
1928.....			(ⁿ)			(ⁿ)			(ⁿ)	(ⁿ)	(ⁿ)	(ⁿ)
1929.....	(45.5)			122.9	113.8	(9.1)	22.6			(ⁿ)	(ⁿ)	(ⁿ)
1930.....							30.7			(ⁿ)	(ⁿ)	(ⁿ)
1931.....	(100.4)			158.2	126.2	(32.0)	42.2			(ⁿ)	(ⁿ)	(ⁿ)
1932.....							47.9			(ⁿ)	(ⁿ)	(ⁿ)
1933.....	(100.8)			[52.5]			48.3			(ⁿ)	(ⁿ)	(ⁿ)
1934.....	(93.9)			[48.0]			45.9			(ⁿ)	(ⁿ)	(ⁿ)
1935.....							39.1			(ⁿ)	(ⁿ)	(ⁿ)
1936.....							37.6					
1937.....							35.6					
1938.....							34.6					
1939.....												
1940.....	98.3			61.4	150.1	(11.3)	26.4			(10.5)		
1941.....												
1942.....												
1943.....												
1944.....				152.0	124.7	(9.9)						
1945.....												
1946.....				174.3	167.3	(7.0)						
1947.....	145.6			81.5			59.3			4.8		
1948.....												
1949.....												
1950.....	162.5			86.5	[80.0]	(6.5)	70.5			5.5		
1951.....												
1952.....												
1953.....												
1954.....	210.2			114.2	186.0	(28.2)	88.7			7.3		
1955.....	223.9			119.1			96.5			8.3		
1956.....	239.9			125.0			106.4			(8.5)		
1957.....	261.6			132.3			121.5			(8.1)		
1958.....	284.0			135.7			141.0			(7.3)		
1959.....	310.0			137.8			164.8			(7.4)		
1960.....	354.2			146.9			200.1			(7.2)		

¹ Figures also reported in *SPM*, p. 335.

()—Figures derived by subtraction or addition.

n—none, negligible or not applicable

[]—Estimated figures.

SOURCES AND NOTES TO TABLE V-B-1

General note.—The figures are arranged in such a way as to have the reporting as of the year end. Actually the figures for 1947 down through 1955 are reported as of October 1 of the given year. The figures for 1946 are as of January 1, 1947; for 1944, as of January 1945; for 1943, as of November 1943; for 1940, as of October 1, 1940. The years 1931 down through 1938 are as of January of the following year (i.e., 1938 equals January 1, 1939). The year 1930 is as of March 1931; 1929 is as of January of the following year; likewise 1924 down through 1928. The column designations are as follows:

Col. A, D, G, J.—Refer to the grand total number of "jobs" (positions filled), one or more of which may be held by the same actual person.

Col. B, E, F, K.—Refer to the actual number of persons employed in staff positions.

T—Total.

Reg—Regular (full-time).

Pl—Plurality (part-time).

Col. C, F, I, L.—Refer to plurality job-holders

Col. J, K, L.—"Other organizations" refer to RAP in government, administration, industry, party, trade-union and other such organizations.

Column in Table Source and Discussion

1914 B, E, H.—*SSSR-Tsif-1958*, p. 363, presents figures for 1914. In addition to this source, the figure of 10,000 for 1914A is given in *KS-1956*, p. 248. *Sinetskii, PP Kadry*, p. 35, gives the figure of 6,900 for 1916 (i.e., an approximation to 1914D).

1914 A, D, G.—The figures for the total are the same as those stated for regular RAP in 1914 B, E, H because plural job-holders were not a recognized phenomenon. Multiple-job holders were few in number.

1940, 1950, 1956, 1957 A, D, G.—Figures incorporated in this table from the sources indicated for the respective years in

the notes below appear also in *SSSR-Tsif-1958*, p. 363, and *NarKhoz-1959*, p. 93.
 1924 E.—*Sinetskii, PP Kadry*, p. 57.
 1927 E.—*Sinetskii, PP Kadry*, p. 61.
 1929 G.—*Kul't Stroi-1940*, p. 230. The figure for 1929 is that for April 1, 1929. The date is explicitly given. Note that the same figure is given "as of the end of 1929" in *SC-Eng-1936*, p. 466.
 1930 G.—*NarKhoz-1932*, p. 546. *Kul't Stroi-1935*, p. 143, gives the figure of 31,600 for the beginning of the year 1931.
 1929, 1931, 1940, 1943, 1944, 1946 E.—*Sinetskii, PP Kadry*, p. 104.
 1929 D.—*Sinetskii, PP Kadry*, pp. 66 and 105. The 22,900 figure is also in *NarKhoz-1932*, p. 540.
 1929 F.—As a difference, 22,900 (total *RAP* in higher educational establishments) minus 13,800 (regular *RAP* in higher educational establishments).
 1931 D.—*Sinetskii, PP Kadry*, p. 79.
 1931 G.—*SC-Eng-1936*, p. 466; and *Sots Stroi-1936*, p. 589.
 1932 G.—*Kul't Stroi-1940*, p. 230, reports the figure of 47,900 *RAP* in "all" research establishments.
 1933 G.—*Kul't Stroi-1935*, p. 143. The figure includes 41,300 in main research institutes and their divisions and 7,000 in other research institutes. The identical total figure (48,300) is in *SC-Eng-1936*, p. 466.
Kul't Stroi-1940, p. 230, reports the figure of 41,300 in research establishments. In order to "smooth" over the drop in the number of *RAP* (after 1935), this latter source apparently excludes personnel in branch establishments.
 1934 G.—*SC-Eng-1936*, p. 466; *Sots Stroi-1936*, p. 589. The figure 45,900 includes 38,200 in main research institutes and their divisions and 7,700 in all other research establishments. *Kul't Stroi-1940*, p. 230, reports the figure of 38,700 *RAP* in research establishments. Apparently the same manipulation of statistics as mentioned in the note to 1933G above was performed for 1934G also.

1933, 1934 D.—Figures are estimated on the basis of the teacher-student ratio, which is obtained from the data in *Kul't Stroi-1935*, p. 63.

1935-38 G.—*Kul't Stroi-1940*, p. 230. All figures are as of January 1 of the calendar year that follows the year indicated in the table (i.e., all January 1 references were converted to "year end" entries).

1940 A.—*KS-1956*, p. 248; *NKh-1956*, p. 233.

1940 A, D, G, J.—*SSSR-Tsif-1958*, p. 363. For 1940D *Sinetskii, PP Kadry*, p. 98, states that there were "more than 60,000" *RAP* in higher educational establishments, of whom "over 10,000" were plurality job-holders.

1943 E.—*Sinetskii, PP Kadry*, p. 96. Same figure appears also on the graph (p. 104).

1944 D, E.—*Sinetskii, PP Kadry*, p. 100.

1946 D.—*Sinetskii, PP Kadry*, p. 105. It should be noted that of 74,300 total appointees in higher education, 67,300 had staff appointments, but among these 46,100 had only one job and 21,200 had more than one job.

1947, 1950, 1955 A, D, G, J.—*KS-1956*, p. 248. Figures as of October 1 of the corresponding year.

1950 D.—The figure 86,500, which is included in the table, is from *KS-1956*, p. 248. The corresponding figure estimated in *SPM*, p. 335, is 87,000.

1953 A, D, G.—*NarKhoz-1959*, p. 843.

1954 A, D, G.—*NKh-1956*, p. 233. Figures as of October 1.

1954 E.—*VVSh*, No. 3, 1955, p. 3.

1956, 1957 A, D, G.—*SSSR-Tsif-1958*, p. 363. Figures as of October 1. An identical set of figures as those in the table is given for 1956 in *NKh-1957*, p. 257. Similar figures have also appeared in *BSE-YB-1958*, pp. 60, 82 and 94; *Vestnik statistiki*, No. 2, 1958, p. 21 (*Itogi 1957*); *Pravda*, Jan. 31, 1957 (*Itogi 1956*).

1958, 1959 A, D, G.—*NarKhoz-1960*, p. 754.

1960 A, D, G.—*SSSR-Tsif-1960*, p. 315.

1956-1960 J.—As a residual.

TABLE V-B-2.—Summary data on the composition of Soviet research and academic personnel (*RAP*) for selected post-war years (as of October 1)

	1947	1950	1953	1954	1955	1956	1957	1958	1959
	Thous.	%	Thous.	%	Thous.	%	Thous.	%	Thous.
<i>Total RAP</i>	145.6	100.0	162.5	100.0	191.9	100.0	210.2	100.0	223.9
of whom employed in:									
research establishments ^a	59.3	40.7	70.5	43.4	80.0	41.7	88.7	42.2	96.5
higher educational estab....	81.5	56.0	86.5	53.2	105.4	54.9	114.2	54.3	119.1
other.....	4.8	3.3	5.5	3.4	6.5	3.4	7.3	3.5	8.3
<i>Total RAP</i>	145.6	100.0	162.5	100.0	191.9	100.0	210.2	100.0	223.9
of whom:									
with doctor's degree.....	7.7	5.3	8.3	5.1	8.5	4.4	9.0	4.3	9.5
with candidate's degree ^a	36.9	25.3	45.5	28.0	59.5	31.0	69.2	32.9	78.0
without advanced degree ^a	101.0	69.4	108.7	66.9	123.9	64.6	132.0	62.8	136.4
<i>Total RAP</i>	145.6	100.0	162.5	100.0	191.9	100.0	210.2	100.0	223.9
of whom with academic rank:									
professor.....	8.9	6.1	8.9	5.5	8.5	4.4	8.8	4.2	9.0
associate professor.....	20.2	13.9	21.8	13.4	24.7	12.9	26.8	12.7	30.4
senior research associate.....	9.8	6.7	11.4	7.0	12.9	6.7	14.0	6.5	15.6
junior research associate.....									
and assistant professor.....	25.6	17.6	19.6	12.1	19.8	10.3	16.2	7.7	17.1
other (lower ranks).....	81.1	55.7	100.8	62.0	126.0	65.7	144.4	68.7	154.6
<i>Total RAP</i>	145.6	100.0	162.5	100.0	191.9	100.0	210.2	100.0	223.9
of whom with academic rank:									
professor.....	8.9	6.1	8.9	5.5	8.5	4.4	8.8	4.2	9.0
associate professor.....	20.2	13.9	21.8	13.4	24.7	12.9	26.8	12.7	30.4
senior research associate.....	9.8	6.7	11.4	7.0	12.9	6.7	14.0	6.5	15.6
junior research associate.....									
and assistant professor.....	25.6	17.6	19.6	12.1	19.8	10.3	16.2	7.7	17.1
other (lower ranks).....	81.1	55.7	100.8	62.0	126.0	65.7	144.4	68.7	154.6
<i>Total RAP</i>	145.6	100.0	162.5	100.0	191.9	100.0	210.2	100.0	223.9
of whom with academic rank:									
professor.....	8.9	6.1	8.9	5.5	8.5	4.4	8.8	4.2	9.0
associate professor.....	20.2	13.9	21.8	13.4	24.7	12.9	26.8	12.7	30.4
senior research associate.....	9.8	6.7	11.4	7.0	12.9	6.7	14.0	6.5	15.6
junior research associate.....									
and assistant professor.....	25.6	17.6	19.6	12.1	19.8	10.3	16.2	7.7	17.1
other (lower ranks).....	81.1	55.7	100.8	62.0	126.0	65.7	144.4	68.7	154.6

^a Derived as a residual.

^b Includes research establishments and academies of the USSR and union republics.

SOURCES: For 1947, 1950, 1955: *KS-1956*, p. 248; for 1950, 1954, 1955: *NKt-1956*, p. 233; for 1953, 1957, 1958, 1959: *NarKhoz-1959*, p. 843; 1959: *NarKhoz-1960*, p. 754.
 for 1956, 1957, 1958: *Dos-1957*, p. 248; *NKt-1957*, pp. 257-58; for 1957: *SSSR-Tsif-1958*, p. 363; for 1958: *NarKhoz-1958*, p. 233; for 1959: *NarKhoz-1959*, p. 315; for 1960: *NarKhoz-1960*, p. 754.

Years of College Education, by Major Occupation Group, as of April 1950.

TABLE VI-US-3.—Estimated Number of Persons Employed in the U. S. with Four or More Years of College Education by Major Industry Group, Occupation Group and Sex, as of April 1950

TABLE VI-US-4.—Number and Ratio of Persons with Four or More Years of College Education

among Selected Engineering and Scientific Occupations in the United States, by Sex, as of April 1950

APPENDIX VI-Q.—Comparison of Soviet and United States Reporting of Industry Sectors

APPENDIX VI-W.—Quotations of Monthly Wage Scales and Index of Wages for Various Occupations of Soviet Workers and Salaried Employees

TABLE VI-A-1.—Aggregate number of professionals and semiprofessionals employed in the civilian economy of the U.S.S.R., selected years, 1913-59
[In thousands]

Date and type of reporting	Professionals with completed higher education	Semiprofessionals with secondary specialized education	Total trained specialists	Source note
Year end 1913.....	136.0	34.0	190.0	AA
January 1928 (<i>TsSU</i> , actual figures, 1957 reporting).....	233.0	288.0	521.0	A
Year end 1929 (estimate in <i>SPM</i> on basis of <i>Gosplan</i> reporting).....	(283.5)	.....	.....	B
Year end 1932 (<i>Gosplan</i> , actual figures).....	462.4	903.7	1,366.1	C
Year end 1937 (<i>Gosplan</i> , actual figures).....	748.8	1,440.0	2,188.8	D
Year end 1940 (estimate in <i>SPM</i> on the basis of a variety of sources).....	(850.0 to 900.0)	(1650.0 to 1700.0)	(c. 2550.0)	E
January 1, 1941 (<i>TsSU</i> , actual figures, 1956 reporting).....	908.0	1,492.2	2,400.2	F
Year end 1946 (official statement).....	.....	.....	(c. 3000.0)	G
Year end 1948 (estimate in <i>SPM</i> on the basis of <i>Gosplan</i> percentage increase reporting).....	.....	.....	(c. 3920.0)	H
Year end 1950 (estimate in <i>SPM</i> on basis of <i>Gosplan</i> percentage increase reporting).....	(1573.0 to 1665.0)	(3015.0 to 3107.0)	(c. 4680.0)	I
Year end 1953 (estimate in <i>SPM</i> on basis of <i>Gosplan</i> percentage increase reporting).....	(1870.0 to 1980.0)	(3870.0 to 3980.0)	(c. 5850.0)	J
Year end 1954 (estimate in <i>SPM</i> on basis of <i>Gosplan</i> percentage increase reporting).....	(c. 2218.0)	(c. 3885.0)	(c. 6103.0)	K
July 1, 1955 (<i>TsSU</i> , actual figures, 1956 reporting).....	2184.0	2949.1	5133.1	L
January 1, 1956 (<i>TsSU</i> actual figures, 1956 reporting).....	2340.0	3213.0	5553.0	M
December 1, 1956 (<i>TsSU</i> actual figures, 1957 reporting).....	2633.0	3624.0	6257.0	N
December 1, 1957 (<i>TsSU</i> , actual figures, 1958 reporting).....	2805.0	4016.0	6821.0	O
December 1, 1958 (<i>TsSU</i> , actual figures, 1959 reporting).....	3027.0	4449.0	7476.0	P
December 1, 1959 (<i>TsSU</i> , actual figures, 1960 reporting).....	3236.0	4781.0	8017.0	Q

SOURCES AND NOTES TO TABLE VI-A-1

Row in table Sources and Notes

AA.—*Vestnik statistiki*, No. 5, 1959, p. 80.A.—*Dos-1957*, p. 257. The source indicates that the figures are "as of 1928." On the basis of an examination of the breakdowns, it appears that the date should have been "end of 1927" or "Jan. 1928."B.—Estimate presented in *SPM*, p. 343, on the basis of figures given in *Itoigi pervogo FYP*, pp. 215-19 and *Plan Kadrov-1930*, p. 104.C.—*Vtoroi FYP*, pp. 512-13 (also reported in *SPM*, p. 344).D.—*Tretii FYP*, p. 238 (also reported in *SPM*, p. 345).E, L.—*NKh-1956*, p. 194.M.—*NKh-1956*, p. 193.N.—*Dos-1957*, p. 257.O.—*SSSR-Tsif-1958*, p. 316. This source also repeats the data for Rows AA, A, F, L and N.P.—*Vestnik statistiki*, No. 5, 1959, p. 80. This source repeats the data for Rows A, F, L, and O as well.AA, A, F, L-P, Q.—*NarKhoz-1959*, pp. 102, 673; *NarKhoz-1960*, p. 602.E, G, H, I, J.—Estimate derived in *SPM*, pp. 345-49, on the basis of Soviet official reporting by the *Gosplan* of percentage increases in the number of specialists employed in any given year in reference to another year of reporting used as a base. Soviet postwar pronouncements about the number of trained specialists employed in the national economy were as follows (year-end references):

Year	Reference of increase	Source
1946.....	"Somewhat over 3 million".	<i>VVSh</i> , Nos. 11-12, 1946, p. 1 (Kaftanov).
1948.....	155 percent of 1940.....	<i>NarKhoz-SBX</i> , No. 3, p. 413 (Itoigi 1948).
1949.....	168 percent of 1940.....	<i>NarKhoz-SBX</i> , No. 3, p. 445 (Itoigi 1949).
1950.....	109 percent of 1949.....	<i>NarKhoz-SBX</i> , No. 4, p. 423 (Itoigi 1950).
1950.....	184 percent of 1940.....	<i>Voprosy ekonomiki</i> , No. 5, 1951, p. 13 (Itoigi 1946-50).
1951.....	108 percent of 1950.....	<i>Voprosy ekonomiki</i> , No. 2, 1952, p. 11 (Itoigi 1951).
1951.....	"Somewhat over 5 million".	<i>Bol'shevik</i> , No. 7, 1952, p. 28 (Kulagin article).
1952.....	108 percent of 1951.....	<i>Pravda</i> (Malenkov), Oct. 6, 1952.
1952 (fall).....	"About 5,500,000" or "about 220 percent of 1940".	<i>Pravda</i> , Jan. 23, 1953 (Itoigi 1952).
1953.....	108 percent of 1952.....	<i>Pravda</i> , Jan. 31, 1954 (Itoigi 1953).
1953.....	137 percent of 1949.....	<i>Pravda</i> , March 13, 1954 (Saburov speech).
1954.....	109 percent of 1949.....	<i>Pravda</i> , Jan. 21, 1955 (Itoigi 1954).

These pronouncements have to be elaborated upon and worked out in numerical terms. Then they may be used for checking purposes with various estimates.

In the first place, by using 1952 or 1951 as a base, we can obtain several rough approximations as to the size of the professional and semiprofessional labor force for various years. On the basis of the data stated in the table above, the following derivations can be made:

1. 1952 (fall) total size was about 5,500,000, which was 2.2 times larger than in 1940, making 1940 about 2,500,000.

2. 1952 total was about 5,500,000, which was 108 percent of 1951, and therefore 1951 total was 5,093,000; 1951 total was 108 percent of 1950 or 4,715,000.

(a) 1950 was 184 percent of 1940; consequently 1940 was 2,562,000.

(b) 1950 total was 109 percent of 1949 and therefore 1949 total was 4,325,000; 1949 total was 168 percent of 1940, making 1940 total 2,574,000.

3. Total size in 1951 was about 5 million, which was 108 percent of 1950 and 1950 therefore was about 4,630,000.

(a) 1950 total was 184 percent of 1940; consequently 1940 was 2,516,000.

(b) 1950 total was 109 percent of 1949 and therefore 1949 total was 4,248,000; 1949 total was 168 percent of 1940, giving 2,528,000 for 1940.

4. 1951 total was about 5 million, which was 108 percent of 1950, thus 1950 was about 4,630,000; 1950 total was 109 percent of 1949, and therefore 1949 total was 4,248,000. 1953 total was 137 percent of 1949, and therefore 1953 total was 5,820,000.

5. 1952 total was about 5.5 million, 1953 total was 108 percent of 1952 or 5,940,000; 1953 total was 137 percent of 1949 total, and therefore 1949 total was 4,336,000. 1949 total is 168 percent of 1940, and consequently 1940 total is about 2,580,000.

6. 1951 total was about 5 million; 1952 total was 108 percent of 1951 total, making 1952 total 5.4 million; 1953 total was 108 percent of 1952 total, or 5,832,000; 1953 total was 137 percent of 1949 total, and therefore 1949 total was 4,257,000. 1949 total is 168 percent of 1940, making 1940 total 2,534,000.

7. 1948 total was 155 percent of 1940; consequently—

(a) Assuming 1940 as 2,500,000, 1948 total was 3,875,000.

(b) Assuming 1940 as 2,550,000, 1948 total was 3,952,000.

8. 1954 total was 109 percent of 1953; consequently assuming 1953 total as about 5,820,000, we obtain 1954 total of 6,345,000.

All these computations indicate that, although none of the figures coincides for a given year and they all show differences depending on the way in which they were derived, nevertheless, from official pronouncements rough approximations can be obtained about the size of the Soviet professional and semiprofessional labor force combined. The variation is obviously due to the rounding of both base figures for 1952 and 1951 and reported percentage increases. Despite this, the figures for the following years can be accepted as rough approximations:

Year end	Set of estimated figures			Approximate total
1940	2,500,000;	2,562,000;	2,574,000;	c. 2,550,000
	2,580,000;	2,528,000;	2,534,000	c. 3,000,000
1946				c. 3,920,000
1948	3,875,000;	3,952,000		c. 4,270,000
1949	4,325,000;	4,248,000;	4,336,000;	c. 4,680,000
	4,257,000			c. 5,000,000
1950	4,715,000;	4,630,000		c. 5,500,000
1952				c. 5,850,000
1953	5,820,000;	5,940,000		c. 6,350,000
1954	6,376,000;	6,345,000		

In addition to the aggregate number of trained specialists for the years 1940, 1950 and 1953, the distribution of professionals and semiprofessionals can be estimated in the following way.

For 1940 one Soviet source (*VVSh*, No. 10, 1946, p. 4) gives the following figures on workers and employees in the national economy per trained specialist:

1. In 1940 there were 36 workers and employees per each professional with completed higher education.

2. In 1940 there were 21 workers and employees per each semiprofessional with completed secondary specialized education.

3. In 1940 there were 13 workers and employees per each trained professional and semiprofessional combined with completed higher and secondary specialized education, respectively.

Since there is no indication as to whether these figures refer to year end, average annual, or the January 1 reporting of the nonagricultural labor force of Soviet workers and salaried employees employed in the national economy, it is impossible to be certain which employment figures should be used in reconstruction. Therefore the following estimates were made:

Version I. Assuming the 1940 (Jan. 1) nonagricultural labor force as 30 million (W. Eason in A. Bergson (ed.), *Soviet Economic Growth*, p. 110):

	Thousands
1. Estimate of number of professionals	833
2. Estimate of number of semiprofessionals	1,429
3. Total	2,262
4. Estimate of number of professionals and semiprofessionals combined	2,308

Version II. Assuming the 1940 (average annual) nonagricultural labor force as 31.2 million [*idem*]:

1. Estimate of number of professionals	866
2. Estimate of number of semiprofessionals	1,486

3. Total	2,352
4. Estimate of number of professionals and semiprofessionals combined	2,400

Version III. Assuming the 1940 (year end, i.e., Jan. 1, 1941) nonagricultural labor force as 31,500,000 [*idem*]:

1. Estimate of number of professionals	875
2. Estimate of number of semiprofessionals	1,500

3. Total	2,375
4. Estimate of number of professionals and semiprofessionals combined	2,423

The discrepancies are obviously due to rounding of both figures on workers and employees and number of workers and employees per one specialist of any given level. There is admittedly no precision in such estimates, but it seems most likely that the figures refer to the beginning of the year. If we assume that the 1940 (year end) number of specialists was about 2,550,000 and that graduations of specialists in 1940 were about 320,000, then the figure for 1939 (year end, i.e., Jan. 1, 1940) should have been somewhat above 2,230,000 (without accounting for attrition), or about the same as in Version I above. Consequently, there is a probability that the figures stated do refer to January 1940 rather than to the end of that year.

Regardless of these discrepancies and uncertainty as to the date of reporting, on the basis of these data it is possible to ascertain that by 1940 the labor force of trained specialists consisted of 33 to 35 percent professionals with higher education and 67 to 65 percent semiprofessionals with secondary specialized education. Applying this ratio, there were, by 1940, 850,000–900,000 professionals and 1,650,000–1,700,000 semiprofessionals.

Another significant statement about the professional labor force relates to this estimate of professionals with completed higher education from among all trained specialists. One source (*Zhirnov, Kul'turnoe*, p. 23) states that just before the beginning of the war in 1941, the number of professionals employed in the national economy was "almost 1 million." Since graduations in 1941 were about 100,000, the 1940 total number of professionals employed was less than 900,000, or about the same as indicated in the reconstruction presented above.

For 1950 one source (F. Koshelev, *Pod'em material'nogo i kul'turnogo urovnia zhizni sovetskogo naroda*, Moscow, 1954, p. 40) states that between 1940 and 1950 the total trained labor force (number of employed specialists) increased by 84 percent, and that the number of professionals increased by 85 percent. The first part of this statement confirms the relationship utilized for the estimates above that the 1940 total trained labor force was about 2,550,000 and in 1950 was about 4,680,000:

	[in thousands]			
	1940 Version (a)	1940 Version (b)	1950 Version (a)	1950 Version (b)
Professionals	850	900	1,573	1,665
Semiprofessionals	1,700	1,650	3,107	3,015
Total trained labor force	2,550	2,550	4,680	4,680

For 1953 one source (*VVSh*, No. 10, 1954, p. 1) states that the number of professionals with higher education employed in the national economy increased between 1940 and the end of 1953 by 220 percent. Assuming the 1940 composition, we obtain the following composition of professional and semiprofessional labor force, depending upon which assumed distribution for 1940 is taken:

	[in thousands]			
	1940 Version (a)	1940 Version (b)	1950 Version (a)	1950 Version (b)
Professionals	850	900	1,870	1,980
Semiprofessionals	1,700	1,650	3,980	3,870
Total trained labor force	2,550	2,550	5,850	5,850

Note: All these estimates were made before data in absolute numerical terms were officially released in 1956. In retrospect, therefore, the estimate of the number of professionals in the Soviet economy seems to be sufficiently accurate (*SPM* estimate, 850-900,000; 1956 official reporting, 908,000). The number of semiprofessionals was overestimated by 150-200,000 (*SPM* estimate, 1,650,000-1,700,000; 1956 official reporting, 1,492,000). The most likely explanation of this latter difference is that a large number of semiprofessionals withdrew from the labor force for further training or to serve in the armed forces.

TABLE VI-A-2-P.—*Soviet professional labor force: actual number of graduate specialists employed in the civilian economy of the U.S.S.R. by branch specialty in which they were trained, 1928-59*

Branch	Jan. 1928	Year end 1937	SPM estimate year end 1940	Jan. 1 1941	SPM estimate year end 1954	July 1 1955	Dec. 1 1956	Dec. 1 1957	Dec. 1 1959
	A	B	C	D	E	F	G	H	I
1. Engineering-industrial	47.0	262.2	(283.5)	289.9	(541.0)	585.9	720.9	816.1	986.6
2. Agricultural	28.0	89.5	(97.3)	69.6	(189.0)	158.7	179.5	193.1	222.4
3. Socioeconomic	26.0	60.2	(61.7)	80.2	(125.0)	160.9	197.7	215.3	259.4
a. Economics, planning and merchandising	13.0	.....	.....	59.3	.....	113.8	141.2	157.5	193.9
b. Jurisprudence	13.0	.....	.....	20.9	.....	47.1	56.5	57.8	65.5
4. Educational-cultural	59.0	231.0	(284.1)	300.4	(857.0)	906.4	1116.6	1144.9	1278.9
5. Health	63.0	105.9	(121.6)	140.8	(324.0)	299.0	329.4	346.0	378.6
Total, 1-5	223.0	748.8	(848.2)	880.9	(2036.0)	2110.9	2544.1	2715.4	3125.9
Undistributed residual	10.0	.....	(57.8)	27.1	(182.0)	73.1	87.1	90.1	109.8
Grand total	233.0	748.8	(906.0)	908.0	(2218.0)	2184.0	2631.2	2805.5	3235.7

TABLE VI-2-SP.—*Soviet semiprofessional labor force: actual number of technical specialists employed in the civilian economy of the U.S.S.R. by branch specialty in which they were trained, 1928-59*

Branch	Jan. 1928	Year end 1937	SPM estimate year end 1940	Jan. 1 1941	SPM estimate year end 1954	July 1 1955	Dec. 1 1956	Dec. 1 1957	Dec. 1 1959
	A	B	C	D	E	F	G	H	I
1. Engineering-industrial	51.0	372.3	(413.5)	320.1	na	804.9	1049.7	1257.0	1679.5
2. Agricultural	31.0	145.5	(191.7)	92.8	na	254.4	295.4	310.0	360.7
3. Socioeconomic	8.0	184.6	(174.9)	42.4	na	209.3	274.8	314.0	405.7
a. Economics, planning and merchandising	6.0	.....	.....	36.2	na	186.1	251.8	294.0	387.6
b. Jurisprudence	2.0	.....	.....	6.2	na	23.2	23.0	20.0	18.1
4. Educational-cultural	137.0	524.3	(618.9)	536.4	na	818.6	934.1	971.0	1018.4
5. Health	48.0	213.3	(370.6)	393.2	na	731.1	900.2	980.0	1119.7
Total, 1-5	275.0	1440.0	(1769.6)	1384.9	na	2818.3	3454.2	3832.0	4584.0
Undistributed residual	13.0	.....	.....	107.3	na	130.8	167.4	184.0	197.1
Grand Total	288.0	1440.0	(1769.6)	1492.2	3885.0	2949.1	3621.6	4016.0	4781.1

SOURCES AND NOTES TO TABLE VI-A-2-P

Column Sources and Notes

A.—*Dos*—1957, p. 258; *SSSR-Tsif*—1958, p. 316.

B.—*Tretii FYP*, p. 238.

C.—Estimate from *SPM*, p. 361, derived as follows (Version P):
[in thousands]

	(M)	(N)	(O)	(P)
Engineering	351.2	333.9	317.3	283.5
Agricultural	120.5	114.6	108.9	97.3
Socioeconomic	76.8	72.9	69.1	61.3
Educational	349.1	333.2	317.9	284.1
Health	149.9	142.7	136.1	121.6
Total	1,047.5	997.3	949.3	848.2

(M) Derived by method of straight addition of graduating classes to the assumed 1937 distribution of employed specialists.

(N) Derived by method of assumed 2 percent average annual attrition rate using 1937 as a base.

(O) Derived by the method of assumed 4 percent average annual losses using 1937 as a base.

(P) Derived by method of assumed 2 percent average annual losses using 1937 as a base and making a downward adjustment for prewar withdrawal (100,000) of professionals from civilian employment (i.e., draft, incarceration, etc.).

Note that party school graduates and extension-correspondence graduates 1938-40 were not included in the distribution. Their total, of 57,800 (adjusted for attrition), is given in the undistributed residual.

D.—*NKh*—1956, p. 194. The same data were repeated in all subsequent statistical handbooks in tables dealing with the employment of specialists.

E.—Estimate derived in *SPM*, p. 363, in the following way:

	[in thousands]				
	1950	1951	1952	1953	1954
Engineering	427.6	447.3	467.6	498.2	541.2
Agricultural	140.1	149.0	160.7	174.5	189.0
Socioeconomic	88.4	98.4	109.2	119.0	124.6
Educational	607.4	674.5	748.3	803.3	857.2
Health	249.1	264.1	290.8	305.9	323.7
All fields	1,512.6	1,633.3	1,776.6	1,900.9	2,035.7
Total, adjusted to include extension graduates	1,512.6	1,680.0	1,864.0	2,027.0	2,218.0

These estimates are derived by the method of assumed 2 percent average annual losses using 1950 as a base. The assumption is made that the 1950 distribution of professionals by field derived below (Version P) is essentially a "true" estimate. The 1950 estimates were as follows:

	[in thousands]					
	(K)	(L)	(M)	(N)	(O)	(P)
Engineering	580.6	485.6	461.4	419.1	388.7	427.6
Agricultural	192.4	160.0	151.7	134.1	127.1	140.1
Socioeconomic	121.5	101.2	95.8	84.9	80.4	88.4
Educational	771.3	665.4	641.2	578.2	557.5	607.4
Health	321.0	274.2	263.6	236.4	227.7	249.1
Total	1968.8	1686.4	1613.7	1452.7	1381.4	1512.6
	1559.4					

(K) Estimated by straight addition of graduating classes to 1937 base.

(L) Estimated by method of 2 percent average annual losses without any adjustment.

(M) Estimated by method of 2 percent average annual losses with assumed 8 percent hypothetical war losses.

(N) Estimated by method of 4 percent average annual losses without any adjustment.

(O) Estimated by method of 4 percent average annual losses with assumed 8 percent hypothetical war losses.

(P) Estimated by method of 2 percent average annual losses with assumed 8 percent hypothetical war losses and with downward adjustment for prewar (1937-40) excessive losses or withdrawals of professionals from civilian labor force.

(Q) Estimated at 3 percent average annual losses without any adjustment for either hypothetical war losses or prewar withdrawals.

Note that the 1950 and 1954 estimates exclude extension-correspondence and party school graduates. The 1954 total of 182,000 (adjusted for attrition) is given in the undistributed residual. The 1950 estimate of professional graduates (Version P) does not appear on Table VI-A-2-P because no comparison is available with the new official releases. See also the further notes and checks on the 1950 and 1954 estimates in *SPM*, pp. 161-63.

F.—*NKh*—1956, p. 194.

G.—*NKh*—1957, p. 209-10; *Dos*—1957, p. 258.

H.—*SSSR-Tsif*—1958, p. 317.

A, D, G, H.—*NarKhoz*—1959, p. 674.

I.—*NarKhoz*—1960, p. 604.

SOURCES AND NOTES TO TABLE VI-A-2-SP

Column Sources and Notes

A.—*Dos*—1957, p. 258; *SSSR-Tsif*—1958, p. 318.

B.—*Tretii FYP*, p. 238.

C.—Estimated in *SPM*, p. 363 (Version N) as follows:

	[in thousands]			
	(K)	(L)	(M)	(N)
Engineering	484.3	459.8	436.4	413.5
Agricultural	223.5	213.2	203.5	191.7
Socioeconomic	206.1	194.8	183.9	174.9
Educational	723.0	688.5	655.3	618.9
Health	428.8	412.2	396.2	370.6
Total	2,065.7	1,968.5	1,875.3	1,769.6

(K) Derived by the method of straight addition of graduating classes to the assumed 1937 distribution of employed specialists.

(L) Derived by the method of assumed 2 percent average annual attrition rate, using 1937 as a base.

(M) Derived by the method of assumed 4 percent average annual losses, using 1937 as a base.

(N) Derived by the method of assumed 2 percent average annual losses, using 1937 as a base and making a downward adjustment for prewar withdrawal (200,000) of semi-professionals from civilian employment (i.e., draft, incarceration, etc.). It must be noted that despite this adjustment, the total (1,769,600) is still about 70,000 above the estimated total semi-professional labor force. No adjustment was made to account for this difference, since such an adjustment would require further assumptions (i.e., another set of assumptions different from those used in estimates of the professional labor force), and this would complicate even further the estimating technique adopted.

D.—*NKh*—1956, p. 194. The identical data were repeated in all subsequent handbooks released in 1956-60.

E.—Estimated in *SPM*, p. 364. See notes on possible sources of discrepancies and uncertainty of estimating technique in *SPM*, pp. 363-64. The distribution by branch was not available.

F.—*NKh*—1956, p. 194; *NKh*—1957, p. 209.

G.—*NKh*—1957, p. 209; *Dos*—1957, p. 258.

H.—*SSSR-Tsif*—1958, p. 318.

A, D, G, H.—*NarKhoz*—1959, p. 674.

I.—*NarKhoz*—1960, p. 604.

In addition to the data on the number of specialists employed in the national economy presented in Tables VI-A-2-P and VI-A-2-SP, for the years 1928 and 1932 a different type of reporting of specialists employed in the national economy is available in Soviet sources. These data are presented in the supplement below.

SUPPLEMENT TO TABLES VI-A-2-P AND VI-A-2-SP.—*Composition of Soviet trained manpower, by employment, year end 1928 and 1932*
 [in thousands]

Branches	Year end 1928			Year end 1932		
	Profes- sional	Semipro- fessional	Total	Profes- sional	Semipro- fessional	Total
I. All production, administrative, and exchange branches of national economy.....	90.0	56.0	146.0	229.2	386.6	615.8
1. Industry, construction, transportation communication.....	17.9	19.9	37.8	73.6	132.5	206.1
2. Agriculture						
a. Agricultural specialists without administrative functions.....	9.3	8.5	17.8	36.3	58.5	94.8
3. Administrative, government, and exchange.....	62.8	27.6	90.4	119.3	195.6	314.9
a. Socioeconomic segment only						
II. Educational-cultural.....	^a (130.0)			156.9	382.1	539.0
1. Primary- and secondary-school teachers.....	26.0	185.5	211.5	43.2	344.0	387.2
2. Higher education teachers.....	^b (10.4)					
III. Health.....	63.5	72.0	135.5	76.3	135.0	211.3
1. Medical personnel only.....						
Total.....	^c (283.5)			462.4	903.7	1,366.1

SOURCES AND NOTES TO SUPPLEMENT TO TABLES VI-A-2-P AND VI-A-2-SP

^aIn this segment in 1932 there were about 155,000 (see Table IV-A-1-G) persons. Since about 30,000 graduated during the 5-year period, there were about 130,000 "educational-cultural" specialists in 1928.

^bPlan *kadrov*—1930, p. 104.

^cBy addition of I, II, III, where II is an estimate.

All figures for 1928 except those in parentheses are from *Itogi pervogo FYP*, pp. 215–19, 275. The source does not give full coverage of all trained specialists employed. Productive

branches in engineering and in agricultural are singled out, but administrative employment of trained specialists is not given by segment.

All figures for 1932 from *Vtoroi FYP*, pp. 512–13. This table is compiled from Gosplan reporting with full coverage. Administrative personnel (I-3) is singled out from all productive branches of the national economy and is not distributed by field.

The total of 1,366,000 trained specialists constitutes about 50 percent of all specialists employed in the national economy (2,737,000).

APPENDIX VI-A-3.—*Soviet Professional and Semiprofessional Labor Force: A Comparison of Estimates and Official Reporting of the Absolute Number of Specialists Employed in the Civilian Economy*

1. *Professional Labor Force Estimate*

In the appendix to Chapter VI, Tables VI-A-1, VI-A-2-P and VI-A-2-SP present information concerning the supply of specialized manpower employed in the Soviet civilian economy. The data in these tables are of two types: figures stated directly in absolute terms and estimates based on Soviet official releases, which during the years shortly prior to World War II, during its course, and for eleven years afterwards were cast almost exclusively in the enigmatic lingo of "percentage increase." This propagandistically oriented "percentage" game which the Soviet statistical agencies were playing was the product of two dichotomous objectives. One was official secrecy, which wanted to conceal the actual magnitudes of various eco-

nomic indices (including the supply of trained manpower). The other was a drive to "impress" the Soviet population and the world at large by boastful claims that the Soviet Union was making continuing advances. Among other things, the percentages tried to conceal the devastation and losses of manpower caused by World War II and by political purges in the late 1930's. On the other hand, they always made for favorable comparisons between past and present.

In 1956 and 1957 the ice was broken somewhat, mainly for propagandistic reasons (the celebration of the Fortieth anniversary of the October Revolution), and partly because of the desire to straighten out some of the statistical series. In 1956–60 the release of a large number of statistical handbooks

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In this bibliography those primary sources which were abbreviated throughout this volume are preceded by an asterisk, as are the abbreviations themselves. The abbreviation used in the text then follows the full entry.

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**Sots Stroi-1935* (abbreviation). For full title, see *TsUNKhU Gosplana SSSR, Sotsialisticheskoe . . .*

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Abkhazskoi ASSR	Leningrad (gorod)
Adygeiskoi avtonomnoi oblasti	Leningradskoi oblasti
Adzharskoi ASSR	L'vivskoi oblasti
Altaiskogo kraia	Molotovskoi oblasti
Amurskoi oblasti	Mordovskoi ASSR
Arkhangel'skoi oblasti	Moskva (gorod)
Astrakhanskoi oblasti	Moskovskoi oblasti
Belgorodskoi oblasti	Murmanskoi oblasti
Brianskoi oblasti	Novgorodskoi oblasti
Buriat-Mongol'skoi ASSR	Novosibirskoi oblasti
Chardzhouskoi oblasti	Omskoi oblasti
Checheno-Ingushskoi ASSR	Orlovskoi oblasti
Cheliabinskoi oblasti	Penzenskoi oblasti
Cherkasskoi oblasti	Primorskogo kraia
Chkalovskoi oblasti	Riazanskoi oblasti
Chuvashskoi ASSR	Samarkandskoi oblasti
Frunzenskoi oblasti	Smolenskoi oblasti
Iaroslavskoi oblasti	Stalingradskoi oblasti
Irkutskoi oblasti	Sverdlovskoi oblasti
Ivanovskoi oblasti	Tambovskoi oblasti
Kabardino-Balkarskoi ASSR	Tatarskoi ASSR
Kalininskoi oblasti	Ternopol'skoi oblasti
Kaluzhskoi oblasti	Tian'-Shan'skoi oblasti
Karel'skoi ASSR	Tiumenskoi oblasti
Khabarovskogo kraia	Tomskoi oblasti
Kirovogradskoi oblasti	Tul'skoi oblasti
Kirovskoi oblasti	Udmurtskoi ASSR
Komi ASSR	Ul'ianovskoi oblasti
Kostromskoi oblasti	Velikolukskoi oblasti
Krasnodarskogo kraia	Vinnitskoi oblasti
Krasnoiarskogo kraia	Vladimirskoi oblasti
Krymskoi oblasti	Voronezhskoi oblasti
Kuibyshevskoi oblasti	Zakarpatskoi oblasti
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—, *Zhenshchina v Tadzhikskoi SSR* (Women in the Tadzhik SSR), Stalinabad, 1960.

— Turkmen SSR, *Narodnoe khoziaistvo Turkmeneskoi SSR* (National Economy of Turkmen SSR), Ashkhabad, 1957.

— Ukrainian SSR, *Dostizheniya Sovetskoi Ukrayiny za Sorok let* (Achievements of Soviet Ukraine during 40 years), Kiev, 1957.

—, *Promislovist radianskoi Ukrayini za sorok rokiv* (Industry of Soviet Ukraine during 40 years), Kiev, 1957.

—, *Narodnoe gospodarstvo Ukrainskoi RSR* (National Economy of the Ukrainian SSR), Kiev, 1957.

—, *Zdravookhranenie v Ukrainskoi SSR* (Public Health in the Ukrainian SSR), Kiev, 1957.

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Index

Page numbers in *italics* refer to tables and charts.

Abbreviations of sources, xxxv
Academic and research personnel, *See* Research and academic personnel
Academic councils
acceptance of dissertations, 385, 389
members, 379
Academic degrees
U.S. vs. U.S.S.R., 374
See also Advanced degrees, Candidate degree, and Doctor degree
Academic education, restoration of, 82-83
Academic merit and admission to higher education, 246-248, 251
Academic personnel
by field of knowledge, 766, 767, 768
in higher education and research establishments, 763, 765
by nationality, 769
See also Research and academic personnel
Academic rank
age of recipients, 419
appointment to
control and supervision, 41, 378, 387, 390
by period, 419
procedure for, 365-368
awards and rejections, 390
decree establishing, 377
holders of
classification, 376
research and academic personnel, 413, 416-417
revocation, 390
titles, 375-376
See also Research and academic personnel
Academies of Agricultural Sciences
functions, 435
research institutes and personnel, 429
Academies, industrial, managerial and trade union, 33
Academies, military, *See* Military academies
Academies of science of union republics
main research institutes, 427
RAP employment
by place of employment, degree and rank, 412, 413, 415
by type of institution and branch of knowledge, 428, 429
Academy of Arts of U.S.S.R., research institutes and personnel, 429
Academy of Construction and Architecture of U.S.S.R.
functions, 435
institutes and personnel, 429
Academy of Medical Sciences of U.S.S.R.
design of child training programs, 73
functions, 435
research institutes and personnel, 429
Academy of Pedagogical Sciences (RSFSR)
curricular research, 38, 103
design of child training programs, 73
educational reform, 12, 14, 564
functions, 435
research institutes and personnel, 429
research on part-time schools, 96
testing program, 83
Academy of Sciences of U.S.S.R.
advanced degree training, 374
antireligious propaganda, 121-122
applied vs. basic research, 430-432
aspirantura training, 379-381
doctor degree awards, 384
institutes awarding advanced degrees, 770, 773
RAP employment, 412, 413, 414, 415, 416, 429
reorganization, 429, 430, 432-436
research institutes, 427, 429
university of, 210
Academy of Social Sciences (Communist Party)
advanced degree training, 34
functions, 435
Acceptances
aspirantura training, 380, 392, 752-753
higher educational establishments, 246-251, 634, 636-637, 643
semiprofessional schools, 168-169, 192-193, 602, 604-605
See also Admissions
Achievement tests
definition, 256
subjects, 256-257
Activity subjects, instruction in, 111
Administration and control of education, 37-42
Administrative jurisdiction
higher education, 223-225
semiprofessional schools, 165, 625
Administrative personnel
appointments, 464-466
See also Leading personnel and specialists
Admissions
higher educational establishments
committees on, 243, 244, 245
debate on, 251, 252
entrance examinations, 251-252, 256-258
first-year, 265-266, 267-268, 269-270, 271-274
inter-institutional differences, 263-265
and military draft, 54, 55-56
procedures, 243-246
by program and field of study, 269, 270-273, 274
quotas, 357-358
rules and recent changes, 248-251, 629-634
selection, in historic perspective, 246-248
semiprofessional schools
by branch specialty, 604-605
committees, 169
policies, 168-169
rules, current, 600-602
See also Acceptances
Adult education
elementary-secondary level, 24, 90-92
enrollment, 91, 92
informal type, 59-60
part-time curricula, 94-95
Advanced academic rank, *See* Academic rank
Advanced degree holders
attrition rates, 758
classification by field of knowledge and rank, 376
in higher education and research establishments, 763, 765, 766, 767, 768